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PROCEDURE 10 - REPLACING COOLING FAN (FIGURE 1)

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Remove compressor assembly **(Refer to PROCEDURE 7 - REPLACING COMPRESSOR ASSEMBLY OR CAPACITOR).**
5. Remove heat exchanger **(Refer to PROCEDURE 8 - REPLACING HEAT EXCHANGER).**

NOTE: Before removing the four (4) mounting clips, note their position. These clips must be properly reinstalled to secure heat exchanger.

6. Remove the four (4) mounting screws located under sound box and remove mounting clips.
7. Move fan to access the wires connected to fan.
8. Disconnect wires from spade connectors on back side of fan.
9. Remove **GREEN** ground wire from rear of fan by removing self-tapping screw on fan assembly.
10. Remove existing fan.

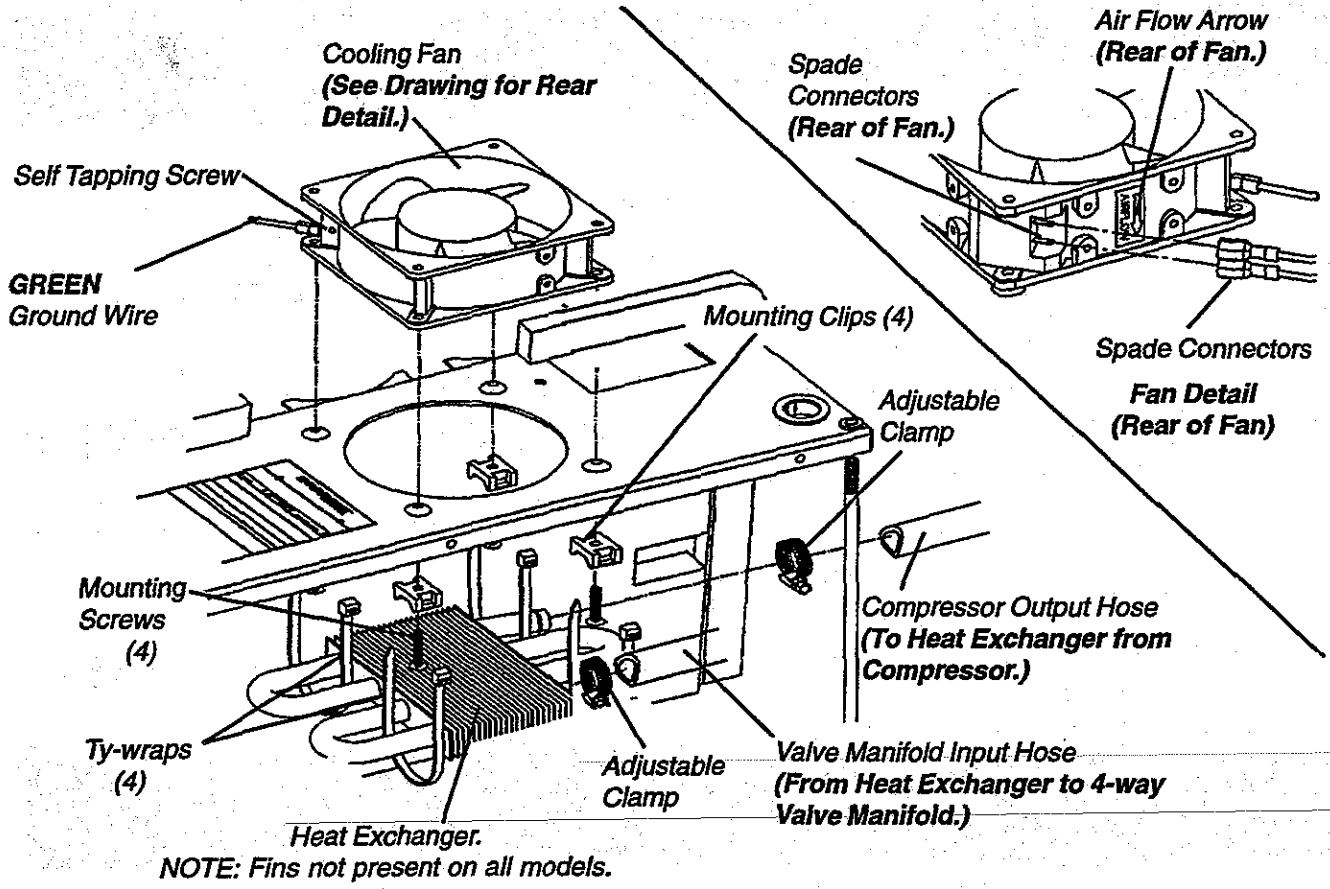
WARNING
Fan must be positioned properly so air from the fan blows DOWN onto the compressor (see air flow arrow on back of fan) or damage to the unit will occur.

11. Reverse **STEPS 6-9** to install **NEW** fan.
12. Reinstall heat exchanger **(Refer to PROCEDURE 8 - REPLACING HEAT EXCHANGER).**
13. Reinstall compressor **(Refer to PROCEDURE 7 - REPLACING COMPRESSOR ASSEMBLY OR CAPACITOR).**
14. Reinstall control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
15. Plug unit in and check for leaks **(Refer to PROCEDURE 19 - LEAK TEST).**

NOTE: Run unit for at least 1/2 hour. If unit runs properly, replace cover. If not, call Invacare Technical Service.

16. Reinstall cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

PROCEDURE 10 (continued) - REPLACING COOLING FAN (FIGURE 1)



NOTE: Fins not present on all models.

FIGURE 1 - REPLACING COOLING FAN

PROCEDURE 11 - REPLACING P.C. BOARD(S) (FIGURE 1)

CAUTION

TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**

WARNING

ONLY QUALIFIED SERVICE TECHNICIANS SHOULD MAKE ANY CHANGES TO THIS EQUIPMENT.

These are precautions that should be followed to prevent damage to the P. C. boards:
Before handling any P. C. boards, you need to be properly grounded to prevent static damage to the components of the board. A Static Cuff must be worn and properly grounded using an alligator clip. Electrical conduit or a water pipe is normally sufficient when a known good ground is not available. Care should be taken to ensure that alligator clip contact with bare metal surface.

When removing quick disconnects, DO NOT pull on wire itself as damage to the connector or solder joint may occur. Hold down the P. C. board with one hand and use an upward force with a slight rocking motion to remove the terminals.

Before installing any P. C. boards, ensure that all insulators are in place.

4. Remove Sensor Wiring Harness Jumper **(P2)** from P.C. board(s) to be replaced.
5. **Disconnect the following:**

CAUTION

DO NOT remove sensor tubing from P.C. Board. Remove from tee fitting ONLY. Damage to sensor assembly could occur.

3LX, 5LX and 5LXO2 before S/N97JXXXX

***Sens*O2 (Top) P.C. Board (5LXO2 ONLY):**

a) Sensor tubing from "T" fitting behind control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**

Control (Bottom) P.C. Board (3LX, 5LX, 5LXO2):

a) Wiring Harness from 9-Pin Wiring Harness Connector **(P1).**
b) Wiring Harness from 8-Pin Wiring Harness Connector **(P5).**
c) Transformer connector **(P3).**
d) Pressure transducer tubing from product tank.

Integrated Board (5LXO2/5LXO2T/6LXO2/6LXO2T) After *S/N97JXXXX*

a) Wiring Harness from 9-Pin Wiring Harness Connector **(P1).**
b) Wiring Harness from 8-Pin Wiring Harness Connector **(P5).**
c) Transformer connector **(P3).**
d) Pressure transducer tubing from product tank.
e) Oxygen Sensor tubing from "T" fitting behind control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
f) Wiring Harness from 4-pin wiring harness connector (P6) [5LXO2T, 6LXO2T Telemetry Unit ONLY].

Remote Display Board

a) Sensor wiring harness if not disconnected in **STEP 1.**

6. Pinch end of each stand-off with needle-nose pliers and remove the P.C. Board(s).

PROCEDURE 11 (continued)- REPLACING P.C. BOARD(S) (FIGURE 1)

7. Position **NEW** P.C. board(s).
8. Snap P.C. Board(s) into place.
9. **3LX, 5LX and 5LXO2 after S/N 97JXXXX. Connect the following:**

   ***Sens*O2 or Integrated (Top) P.C. Board (5LXO2 ONLY):**

   a) Sensor tubing to "T" fitting behind control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**

   Control (Bottom) P.C. Board (IRC3LX, IRC5LX, IRC5LXO2):

   a) Wiring Harness to 9-Pin Wiring Harness Connector **(P1).**
   b) Wiring Harness to 8-Pin Wiring Harness Connector **(P5).**
   c) Transformer connector **(P3).**
10. Reinstall Sensor Wiring Harness Jumper **(P2)** to P.C. board(s).
11. Reconnect P6 (4-pin connector) on wiring harness on Telemetry Units ONLY.
12. Set timing switch to position **"F"** for **3LX.**
13. Run unit and ensure that concentrator operates to specification.

NOTE: After replacing P.C. Board(s), retiming may be necessary. (Refer to PROCEDURE 18 - TIMING THE INVACARE OXYGEN CONCENTRATOR.

14. Check for leaks at transducer tubing on product tank cap **(Refer to PROCEDURE 19 - LEAK TEST in this manual.**
15. Reinstall control panel **(Refer to PROCEDURE 9- REMOVING CONTROL PANEL).**
16. Reinstall cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

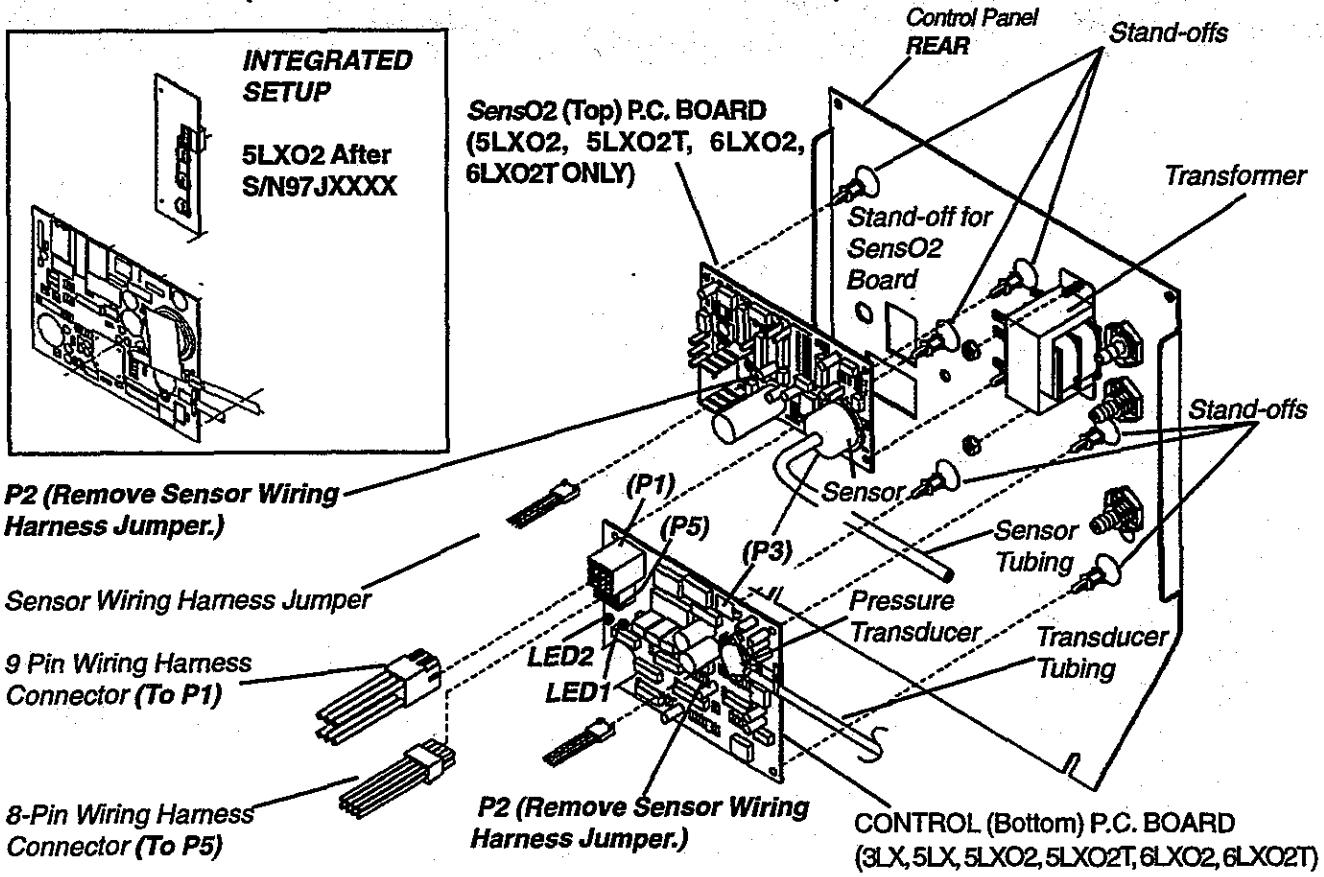


FIGURE 1 - REPLACING P. C. BOARD(S)

PROCEDURE 12 - REPLACING TRANSFORMER ASSEMBLY (FIGURE 1)

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Locate the transformer assembly in the upper right corner on the back of control panel.
5. Unplug the transformer connector from the Control **(bottom)** P.C. Board.
6. Remove the two (2) keps nuts that secure transformer to the back of the control panel.
7. Reverse **STEPS 5-6** to install **NEW** transformer.
8. Torque keps nuts to 13.5 ± 1 in. lbs.
9. Reinstall control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
10. Reinstall cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

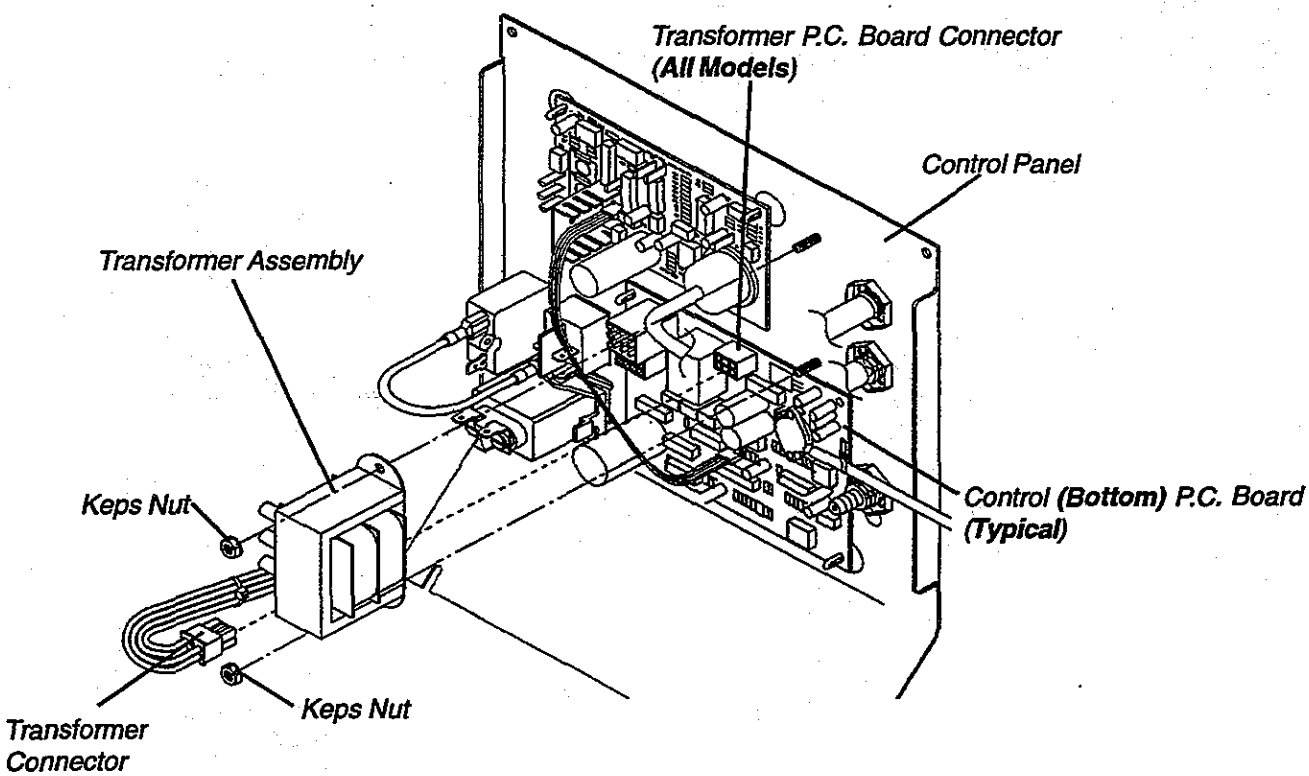


FIGURE 1 - REPLACING TRANSFORMER ASSEMBLY

PROCEDURE 13 - REPLACING ON/OFF SWITCH (FIGURE 1)

CAUTION

TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Remove and code the four (4) wires from back of existing On/Off switch.
5. Compress retaining grips on back of existing On/Off switch and push switch out through front of panel.

CAUTION

DO NOT install the On/Off switch upside down. Universal OFF symbol should be at bottom and Universal ON symbol should be at the top. Possible damage to the concentrator may result if not properly installed.

NOTE: Ensure proper orientation of the On/Off switch and wiring connections before installation. See Detail A and Detail B below.

6. Reverse **STEPS 4-5** to secure **NEW** On/Off switch.
7. Reinstall control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
8. Reinstall cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

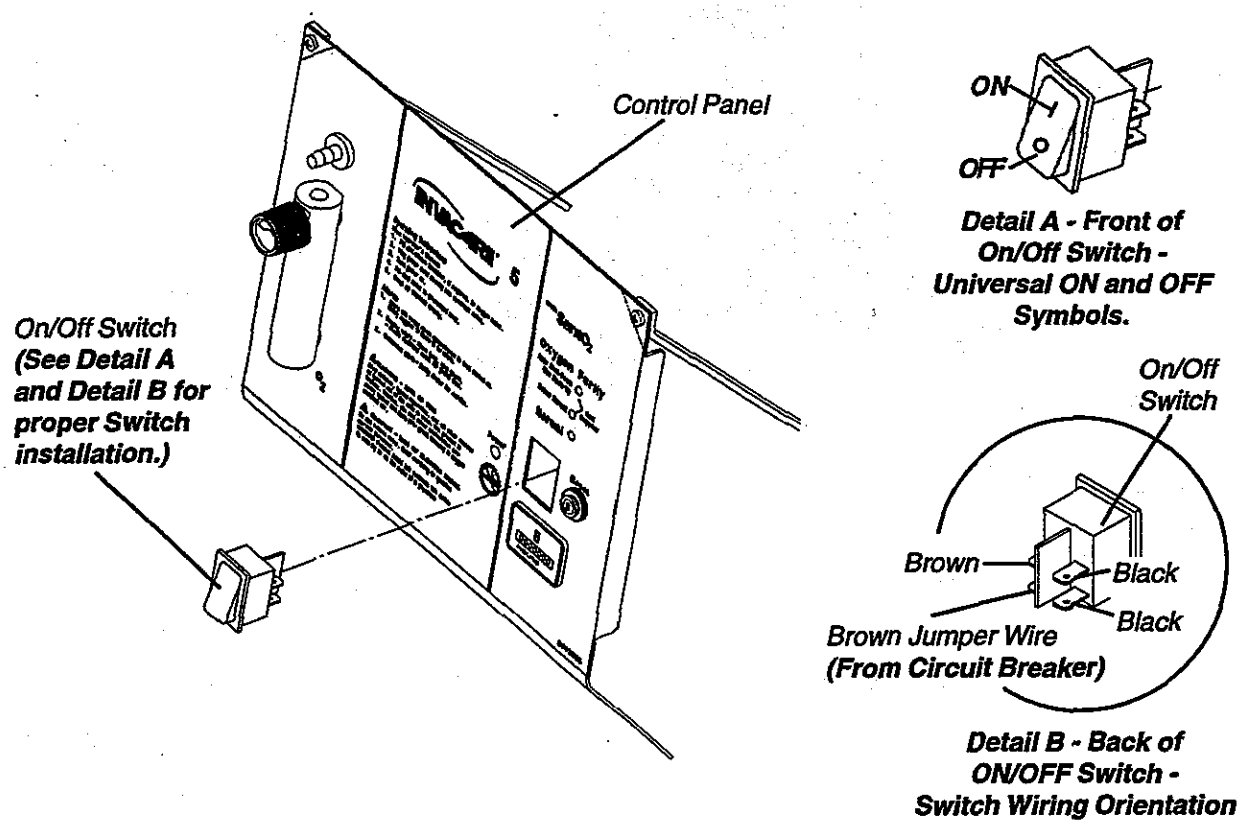


FIGURE 1 - REPLACING ON / OFF SWITCH

PROCEDURE 14 - REPLACING FLOWMETER (FIGURE 1)

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Remove tygon tubing from the top and bottom fittings on back of flowmeter.
5. Remove palnuts from rear of flowmeter.
6. Remove flowmeter from front of control panel.
7. Install new flowmeter reversing **STEPS 4-5.**
8. Reinstall control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
9. Run unit and check for leaks where tygon tubing engages flowmeter fittings **(Refer to PROCEDURE 19 - LEAK TEST).**
10. Reinstall cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

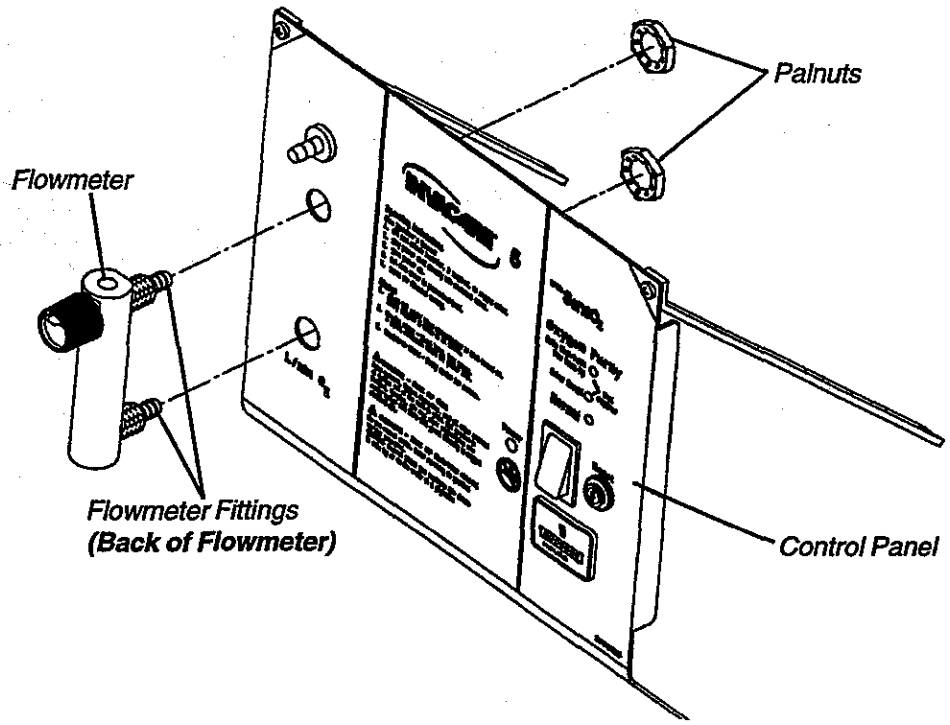


FIGURE 1 - REPLACING FLOWMETER

PROCEDURE 15 - REPLACING HOUR METER (FIGURE 1)

CAUTION

TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Remove and code the two (2) wires connected to back of hour meter.
5. Spread retaining clips on hour meter housing that secure hour meter to control panel.
6. Remove hour meter by pushing meter through front of control panel.
7. Install new hour meter reversing **STEPS 4-6.**
8. Reinstall control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
9. Reinstall cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

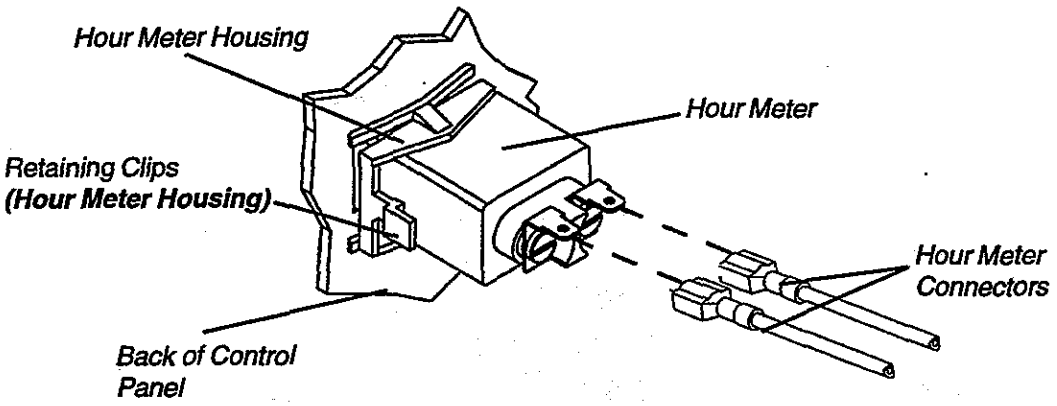


FIGURE 1 - REPLACING HOUR METER

PROCEDURE 16 - REPLACING 4-WAY VALVE/MANIFOLD ASSEMBLY/PILOT VALVES

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

Replacing 4-way Valve (FIGURE 1)

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Remove the four (4) mounting screws that secure the 4-way valve to the manifold assembly.
5. Position **NEW** 4-way valve onto manifold assembly and loosely install mounting screws through 4-way valve and into manifold assembly.

CAUTION
Torque sequence and specification MUST BE adhered to or possible damage to the 4-way valve could result.

6. Tighten mounting screws in the sequence described below **(FIGURE 1).**
7. Pre-torque the mounting screws to 10 ± 2 in. lbs. using the torque sequence.
8. The mounting screws can be now be torqued to 27 ± 3-in. lbs. in the same sequence.

STOP! THIS IS A MAINTENANCE FREE VALVE. OPENING THE VALVE WILL VOID ANY AND ALL WARRANTIES APPLICABLE TO THE VALVE.

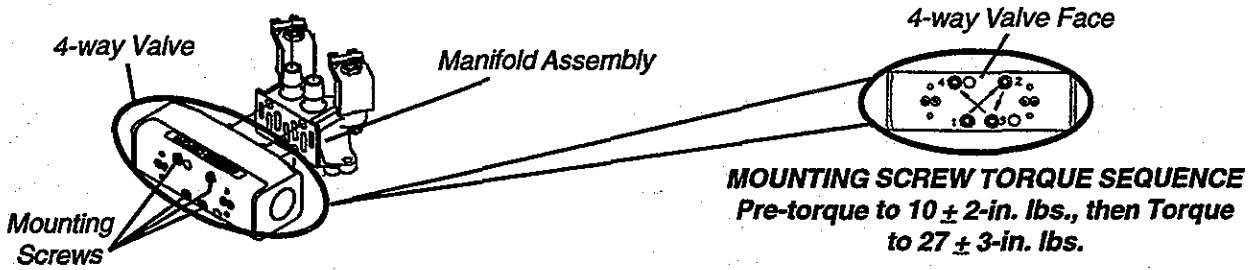

4-way Valve
Manifold Assembly
4-way Valve Face
Mounting Screws
MOUNTING SCREW TORQUE SEQUENCE
Pre-torque to 10 ± 2-in. lbs., then Torque to 27 ± 3-in. lbs.

FIGURE 1 - REPLACING 4-WAY VALVE

Replacing 4-way Valve Manifold Assembly (FIGURE 2)

1. Unplug unit.
2. Remove cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Remove control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
4. Remove the ty-wraps from the sieve bed hoses to top of manifold assembly.
5. Remove hoses from manifold assembly.
6. Remove and code the four (4) spade connectors - two (2) each from the two (2) valve pilots on top of the manifold assembly.
7. Remove the mounting screw that secures muffler canister assembly to rear of sound box **(Refer to PROCEDURE 2 - PREVENTIVE MAINTENANCE).**
8. Remove muffler from muffler canister.
9. Loosen the adjustable clamp that secures valve manifold input hose to front of heat exchanger.
10. Remove hose from front of heat exchanger.

PROCEDURE 16 - REPLACING 4-WAY VALVE/MANIFOLD ASSEMBLY/PILOT VALVES

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

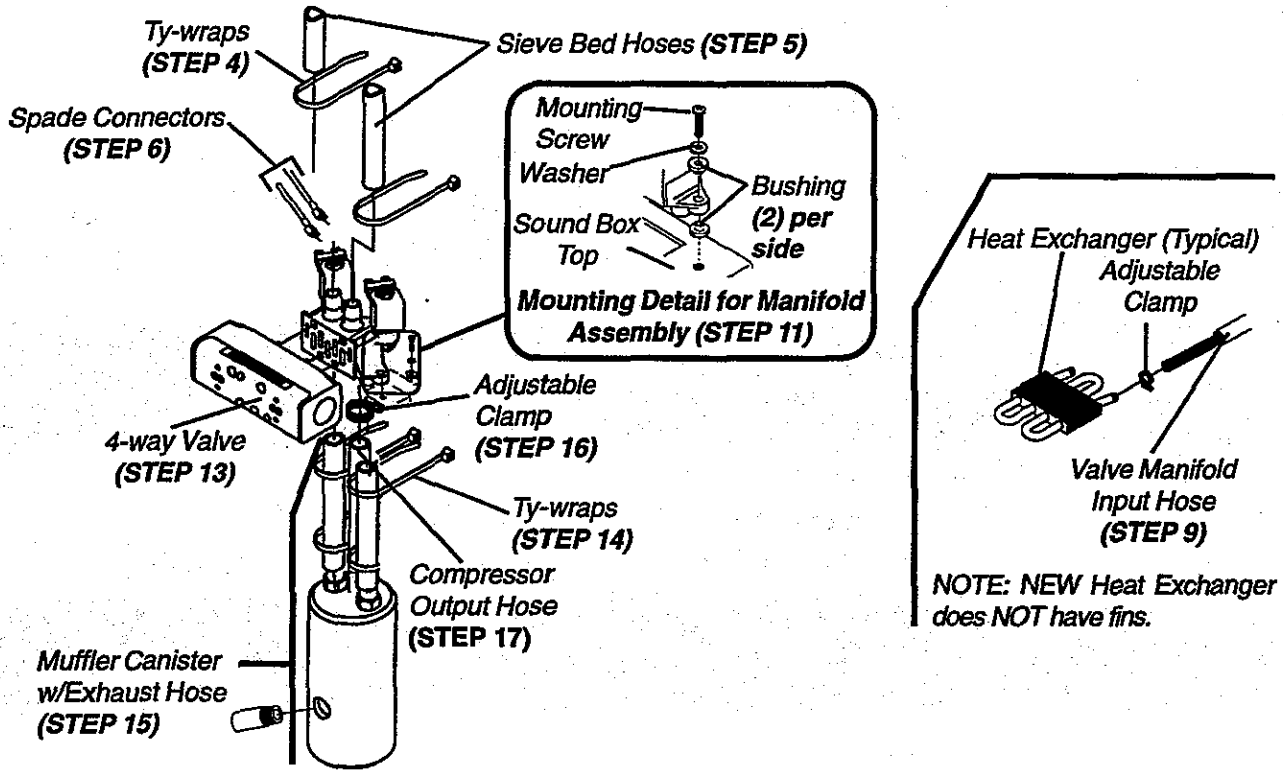

Ty-wraps (STEP 4)
Sieve Bed Hoses (STEP 5)
Spade Connectors (STEP 6)
Mounting Screw
Washer
Bushing (2) per side
Sound Box Top
Mounting Detail for Manifold Assembly (STEP 11)
Adjustable Clamp (STEP 16)
4-way Valve (STEP 13)
Ty-wraps (STEP 14)
Compressor Output Hose (STEP 17)
Muffler Canister w/Exhaust Hose (STEP 15)
Heat Exchanger (Typical)
Adjustable Clamp
Valve Manifold Input Hose (STEP 9)
NOTE: NEW Heat Exchanger does NOT have fins.

FIGURE 2 - REPLACING 4-WAY VALVE MANIFOLD ASSEMBLY

11. Remove the two (2) mounting screws, washer and bushings from manifold securing 4-way valve assembly to top of sound box.
12. The 4-way valve/manifold assembly can be removed from the concentrator by lifting the assembly straight up through the cutout in the sound box.
13. Remove 4-way valve from manifold assembly. **(Refer to PROCEDURE 16 - REPLACING 4-WAY VALVE/MANIFOLD ASSEMBLY) (FIGURE 1).**
14. Remove ty-wraps from the muffler canister hoses on the bottom outside fittings of manifold assembly **(Refer to PROCEDURE 2 - PREVENTIVE MAINTENANCE).**
15. Remove muffler canister w/hoses from manifold.
16. Loosen the adjustable clamp on output hose to bottom center port of manifold assembly.
17. Remove hose from bottom center port of manifold assembly.
18. Reverse **STEPS 13-17** to re-install.
19. Slide 4-way/manifold assembly complete through the cutout in top of sound box then install the two (2) mounting screws, washer and bushings into the manifold to secure the 4-way valve assembly to the top of sound box.
20. Reverse **STEPS 4-10.**
21. Reinstall control panel **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
22. Plug unit in and turn power **ON.**
23. Run unit and check for leaks at hose connections **(Refer to PROCEDURE 19 - LEAK TEST).**

PROCEDURE 16 (continued) - REPLACING 4-WAY VALVE/MANIFOLD ASSEMBLY/PILOT VALVES

Replacing 4-way Valve Manifold Assembly (continued) (FIGURE 2).

24. Check for proper system operation. **(Refer to the SPECIFICATION section of this manual).**
25. Re-install cabinet **(Refer to PROCEDURE 1 - REMOVING CABINET).**

Replacing Pilot Valve Poppets and "O" Rings (FIGURES 3 & 4).

NOTE: Both pilot valves can be accessed while the 4-way valve and sieve bed hoses are intact on the concentrator.

NOTE: DO NOT remove spade connectors from pilot valve coils. Simply lay coils with spade connectors aside while performing this installation.

1. Hold pilot valve stem with the flat blade screwdriver and turn the 9/16-inch locknut counterclockwise one (1) complete turn.
2. Unscrew the pilot valve stem assembly from the manifold while leaving the coil with yoke and locknut intact on stem.
3. Remove pilot valve poppet from inside the pilot valve stem.

STOP! DO NOT REMOVE THE COIL YOKE FROM THE COIL.
The Washer between the Bottom of the Yoke and the Bottom of Coil IS NOT DESIGNED TO BE REMOVED and difficulty in reassembly will be encountered that could cause damage to components.

4. Set aside the coil with yoke and pilot valve stem assembly with the wires still intact.

CAUTION
DO NOT use sharp tools to remove "O" ring from plastic manifold opening. Damage to the plastic manifold and/or plastic manifold airflow passage could occur (FIGURE 3).

5. Remove "O" ring from manifold opening.
6. Discard old poppet and "O" ring.

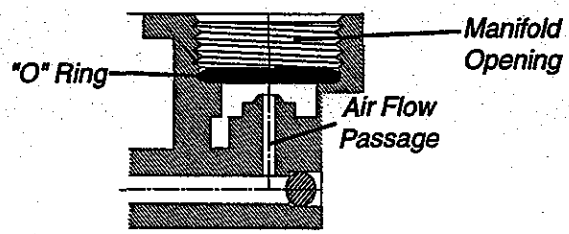


FIGURE 3 - REMOVING/INSTALLING "O" RINGS

7. Install NEW "O" ring into the opening in the plastic manifold housing.

CAUTION
DO NOT overtighten pilot valve stem when installing it into plastic manifold. Damage to the rubber "O" ring and/or plastic manifold may occur.

8. Install NEW slotted poppet into the bottom of the pilot valve stem with tapered end facing to the bottom **(FIGURE 3).**
9. Install pilot valve stem and NEW slotted poppet with coil with yoke and locknut intact into manifold opening.

PROCEDURE 16 (continued) - REPLACING 4-WAY VALVE/MANIFOLD ASSEMBLY/PILOT VALVES

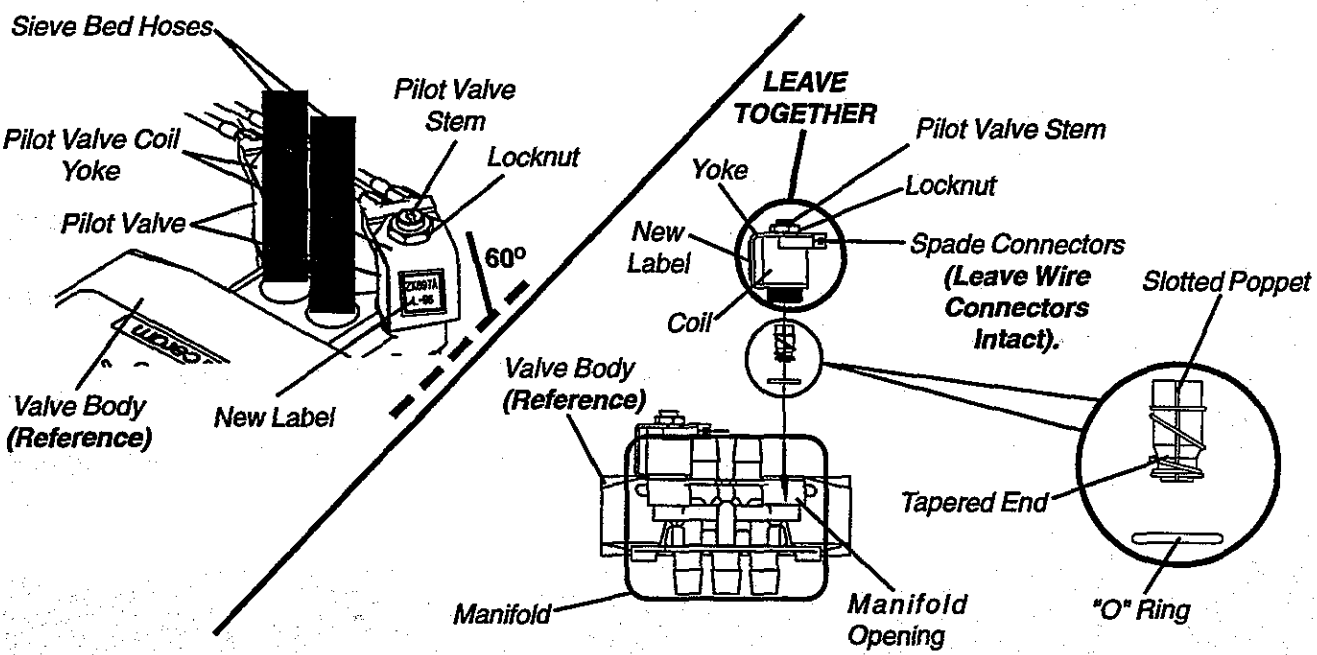


FIGURE 3 - REMOVING/INSTALLING PILOT VALVE POPPETS AND "O" RINGS

10. Use the flat blade screwdriver and tighten pilot valve stem clockwise until snug. **(Reference: Torque to 25-inch lbs. ± 5-inch lbs.).**
11. Install NEW label onto pilot valve coil yoke.
12. Position pilot valve coil with yoke at an approximate 60° angle to the left **(as viewed from the front of valve)** to ensure spade connectors are not pulled or tensioned after reinstallation.
13. Use the flat blade screwdriver and hold the pilot valve stem in place.
14. Tighten locknut clockwise with the 9/16-inch wrench until snug to secure the stem and coil with yoke. **DO NOT OVERTIGHTEN. (Reference: Torque to 20-inch lbs. ± 3-inch lbs.).**

CAUTION

DO NOT overtighten locknut when installing it onto pilot valve stem. Damage to the plastic manifold may occur.

15. Repeat the **FIGURE 3 PROCEDURE** for other pilot valve.
16. Reposition lower control panel mounting screw cut-outs behind lower mounting screws and secure lower mounting screws. **(Refer to FIGURE 2 - REMOVING CONTROL PANEL in this instruction sheet).**

CAUTION

Ensure that hoses behind control panel DO NOT contact cooling fan after control panel reinstallation.

17. Reinstall upper mounting screws. **(Refer to FIGURE 2 - REMOVING CONTROL PANEL in this instruction sheet).**
18. Plug power cord in and turn concentrator on to ensure proper operation.
19. Reinstall cabinet. **(Refer to FIGURE 1 - REMOVING CABINET in this instruction sheet).**
20. If any difficulties are encountered in this installation, contact **Invacare Technical Service at (800) 832-4707 or in Florida 1 - (407) 321-5630.**

PROCEDURE 17 - SENSO2 ALARM INDICATORS AND SWITCH

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

Operation

The Invacare 5 and 6 with SensO2 is equipped with an oxygen purity indicator. This feature monitors the purity level of the oxygen generated by the concentrator. If purity falls below alarm thresholds, indicator lights on the control panel will illuminate.

NOTE: Concentrator can be used during initial warm-up time (approx. 30 minutes). When the unit is initially turned ON, no oxygen purity lights will illuminate. Within 5 to 30 minutes after initial startup, a GREEN light will illuminate in the Oxygen Purity Section of the Control Panel if the concentration level is in specification. Any other indicator light illuminating will signal a condition that requires service. The concentrator may be used while waiting for a light to illuminate.

Indicator Lights (FIGURE 1)

GREEN LIGHT - Normal Operation.

YELLOW LIGHT - You may continue to use the concentrator unless instructed otherwise by your supplier. Call Supplier **IMMEDIATELY.** Be certain that **BACKUP OXYGEN** is nearby.

RED LIGHT - Total unit shutdown. Switch **IMMEDIATELY** to **BACKUP OXYGEN** supply. Call Supplier **IMMEDIATELY.**

GREEN LIGHT - with **YELLOW LIGHT FLASHING** - Oxygen sensor malfunctioning; you may continue to use the concentrator. Call Supplier **IMMEDIATELY.**

NOTE: If your Invacare Concentrator *Sens*O_2 P.C. board is equipped with an alarm threshold switch then you can set the level at which the purity indicators will activate. The switch is located on the sensor board near the top of the unit. (See PURITY INDICATOR SWITCH graphic) (FIGURE 2).

Refer to - Alarm Thresholds in the SPECIFICATION section of this manual.

NOTE: Indicator lights are visible only when lit.

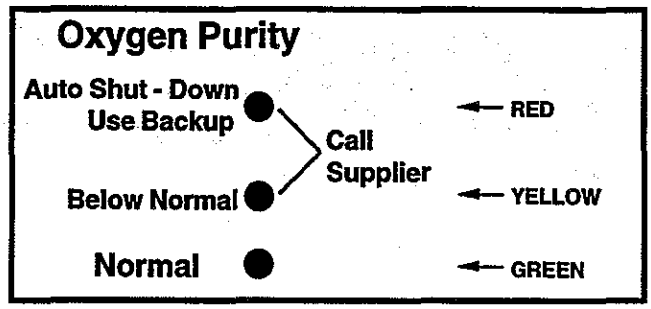


FIGURE 1 - INDICATOR LIGHTS

Purity Indicator Switch - If Installed (FIGURE 2)

1. Unplug unit.
2. Remove cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Locate purity switch on upper left corner of Sensor Board.
4. Set the indicator switch to either 73% or 85%. **(Switch is factory preset at 73%). (Refer to Alarm Thresholds in the SPECIFICATION section of this manual).**
5. Plug in power cord.
6. Run unit and check the indicator lights for operation in accordance with specifications set forth in this **PROCEDURE.**
7. If problems exist, call Invacare Technical Support.
8. Refer to **Operating Sequence** in the **INSTALLATION AND SEQUENCE OF OPERATION** portion of this manual.
9. If operation is within specification, reinstall cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**

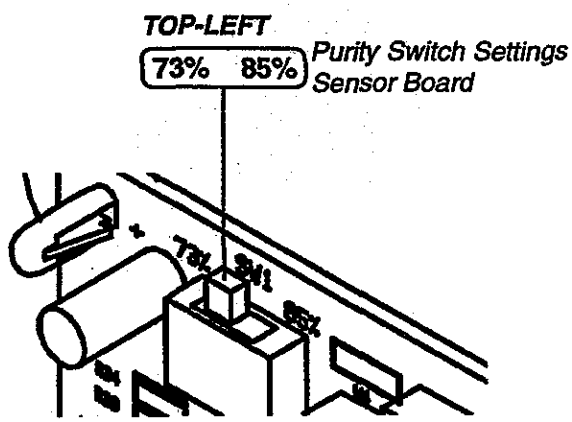


FIGURE 2 - PURITY INDICATOR SWITCH

PROCEDURE 18 - TIMING THE INVACARE IRC5LX/5LXO2 CONCENTRATORS (FIGURE 1)

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

To accommodate for varying tolerances when replacing components, an adjustable timer is used to control the shifting of the **INVACARE 5 and 6** Pressure Equalization (P.E.) Valve. Retiming of a unit involves increasing or decreasing the switch located on the lower right side of the bottom P.C. Board.

1. Unplug unit.
2. Remove cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Plug concentrator in, and turn power on, set flow at 5 L/min. for the **IRC5LX/IRC5LXO2.**
4. Run unit for 20 minutes.
5. Take O2 reading.
6. If oxygen concentration is within specification, retiming is not necessary.
7. Unplug unit and reinstall cabinet.

A. UNITS WITH CONTROL BOARD OR LX SMT BOARD

1. **If retiming is needed, perform the following:**
   a) Unplug unit.
   b) Remove or loosen control Panel. **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
   c) Locate the timing switch on the lower right side of the bottom P.C. Board.

WARNING
Use extreme care when making adjustments to the timing switch. DO NOT allow screwdriver or your hands to contact the P.C. Board when unit is plugged in and ON. Turn unit OFF and unplug before adjusting timing switch. Electrical shock is possible.

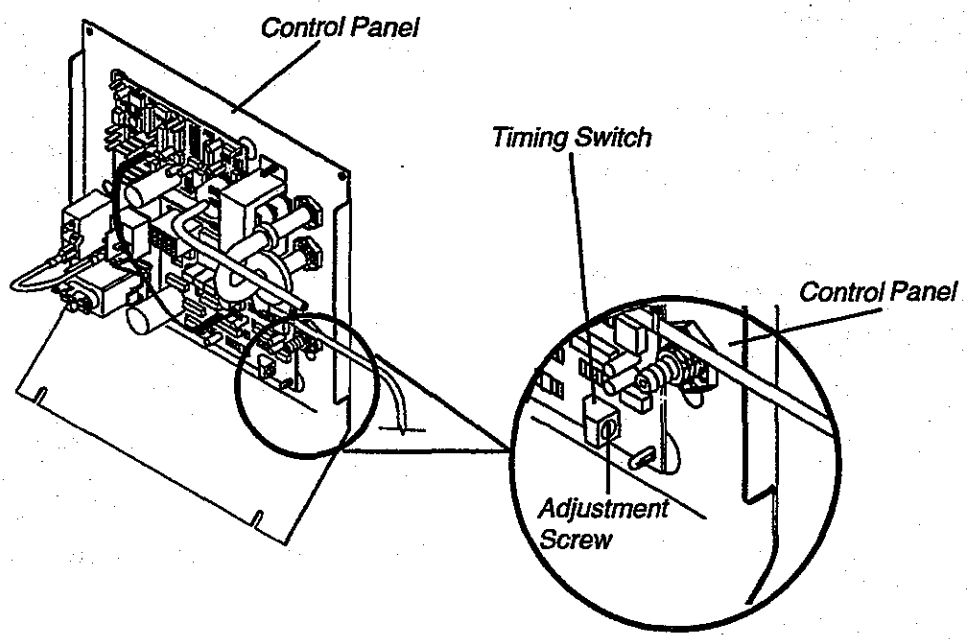


FIGURE 1 - TIMING THE INVACARE 5 CONCENTRATOR - IRC 5LX/5LXO2/6LXO2

PROCEDURE 18 (continued) - TIMING THE INVACARE 5 AND 6 CONCENTRATOR IRC5LX/5LXO2 (FIGURE 1)

e) Insert a small common or flathead screwdriver into the adjustment screw of the timing switch.

f) Set the timing switch initially at the number 7 position.

2. Turn unit on.
3. If after 10 minutes of run time the concentration is below specification, change setting to a number one (1) position lower than the previous setting.
4. Let unit run another 10 minutes. If concentration is lower still, change the switch to a number two (2) positions higher.

NOTE: You will find that the concentrator will perform better at either the higher or lower setting. The normal adjustment range is between 3 and A.

5. Continue to change setting one (1) step at a time (up or down) until the concentration is the highest value achievable. **(Refer to CONCENTRATION LEVELS Chart in this PROCEDURE of the Manual.)**
6. Once concentration has reached specification, retiming is complete.
7. Reinstall inlet filter.
8. Reinstall control panel. **(Refer to PROCEDURE 9 - REMOVING CONTROL PANEL).**
9. Reinstall cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**

PROCEDURE 18 - TIMING THE INVACARE 5 AND 6 CONCENTRATORS IRC5LXO2/ 5LXO2T/6LXO2/6LXO2T (FIGURE 1)

B. UNITS WITH INTEGRATED OR TELEMETRY BOARDS

To accomodate the varying tolerances when replacing components, an adjustable timer is used to control the shift time of the pressure equlization (P.E.) valve. The integrated and telemetry boards allow for either manual or automatic (microprocessor controlled) adjustments of the P.E. shift times.

If manual adjustments is preferred, please refer to SECTION A of this procedure.

Automatic adjustment is performed by the onboard microprocessor to optimize the oxygen output concentration. Unattended operation is possible without the use of any additional manual adjustments.

1. Turn power OFF and unplug the unit.
2. Remove cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. a. If the intergrated or telemetry board has beeen replaced, set the timing switch to position "0".
   b. If the intergrated or telemetry board has NOT beeen replaced, set the timing switch to position "F".
4. Replace the cabinet. Plug concentrator in, and turn power on, set flow at 5 L/min. for the **IRC5LXO2/IRC5LXO2T** and 6 L/min. for the **IRC6LXO2/IRC6LXO2T.**

NOTE: The flow MUST be at rated output for optimum adjustment of oxygen output for all flow ranges.

5. After the FIRST valve shift, the front panel Red LED will slowly blink. This indicates that the unit is in the auto-tune mode. The microprocessor automatically adjusts the length of the P.E. valve timing up or down to provide maximum value of oxygen concentration for the unit at rated flow.
6. a. If the switch is set to position "0", the auto-tune will take a minimum of three (3) hours to complete.
   b. If the switch is set to position "F", the auto-tune will take a minimum of 45 minutes to complete.
7. If the front panel Red LED does NOT blink or the unit alarms immediately, check the timimg switch position.
8. When the auto-tune procedure is completed, the alarm will sound every 3-4 seconds and the front panel Red LED will change from slowly blinking to rapid flashing. Count the number of Red LED flashes between the pauses. This indicates the P.E. timing value the microprocessor has determined as optimum for maximum

oxygen production. This Red LED count corresponds to the same numbers on the timing switch in the manual mode. Record this number.

9. If the timing switch was in position "0" at the start, turn the unit OFF and then BACK on. The unit will now function normally. The timimg value is stored in the microprocessor's memory and is recalled everytime the unit is turned back ON.
10. If the timing switch was in position "F" at the start, remove the cabinet and change the position to "0". The alarm should stop sounding and the Red LED will stop flashing. The unit will now function normally. The timimg value is stored in the microprocessor's memory and is recalled everytime the unit is turned back ON.
11. The timing switch MUST be in position "0" for the automatic control of the P.E. valve time by the unit's microprocessor for maximum oxygen concentration. The timing switch can be changed to manual control by selecting position "1" to "E". Verification of oxygen production MUST be performed according to SECTION A of this procedure.

CONCENTRATION LEVELS CHART - (IRC5LX/5LXO2/6LXO2)

L/Min.	O2 Level
1 L/min.	**95.6% to 93%**
2 L/min.	**95.6% to 93%**
3 L/min.	**95.6% to 93%**
4 L/min.	**95.6% to 91%**
5 L/min.	**95.6% to 87%**
6 L/min.	**95.6% to 87%**

PROCEDURE 19 - LEAK TEST (FIGURES 1-3)

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

Leak Test

1. Unplug unit.
2. Remove cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**
3. Turn the concentrator on.
4. Let concentrator run for 20 minutes.

CAUTION
Apply small amount of leak test solution to fittings only. Avoid all other components. DO NOT leak test 4-way Valve body. Carefully leak test for pressure leaks around Sieve Bed Hoses at 4-way Valve. DO NOT allow leak test solution to enter into 4-way Valve and system.

5. With "leak-test" or equivalent soapy water, leak test the following:
   a) The two (2) sieve bed hoses at the top of 4-way Valve and hose to bottom center port on 4-way Valve **(FIGURE 1).**

NOTE: Refer to PROCEDURE 2 - PREVENTIVE MAINTENANCE for maintenance of heat exchanger and filters.

   b) Hose connections to top and bottom fittings of sieve beds.
   c) P.E. Valve hose connections on top of sieve beds - **IRC 5LX/IRC5LXO2 (FIGURE 2).**
   d) Hose fittings at product tank cap and check valves **(FIGURE 2).**
   e) The front and rear fittings on heat exchanger **(FIGURE 3).**
6. Replace any tubing that appears cracked, worn, etc.
7. Re-install cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**
8. See **SPECIFICATION section of this manual for Concentration Levels.** If low concentrations are observed, refer to the **TROUBLESHOOTING GUIDE in this manual.**

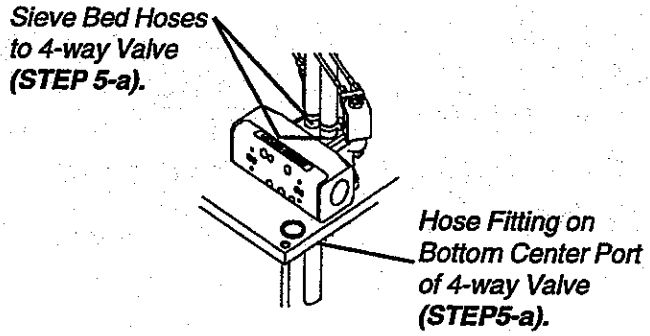


FIGURE 1 - 4-WAY VALVE HOSES

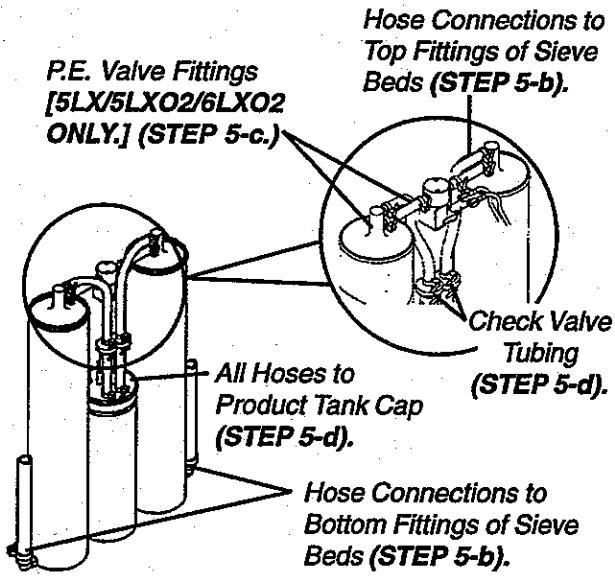
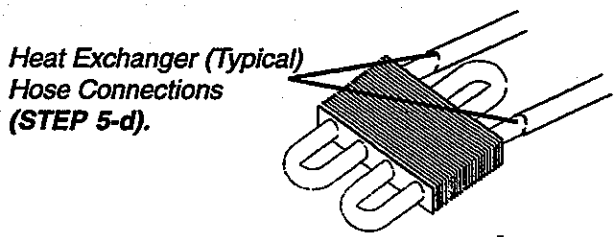

Hose Connections to Top Fittings of Sieve Beds (STEP 5-b).
P.E. Valve Fittings [5LX/5LXO2/6LXO2 ONLY.] (STEP 5-c.)
Check Valve Tubing (STEP 5-d).
All Hoses to Product Tank Cap (STEP 5-d).
Hose Connections to Bottom Fittings of Sieve Beds (STEP 5-b).

FIGURE 2 - SIEVE BED AND PRODUCT TANK HOSES



NOTE: NEW Heat Exchanger does NOT have fins.

FIGURE 3 - HEAT EXCHANGER HOSES

PROCEDURE 20 - ALARM AND SENSOR TEST

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

CAUTION
CHECK ALARMS PERIODICALLY FOR PROPER FUNCTION.

To check each alarm, perform the following:

1. **POWER LOSS -** With the unit running, remove the line cord from power source. The power loss alarm mode should sound the audible alarm immediately or within 30 seconds.

NOTE: With the unit unplugged and inoperable for a short period of time, the Battery Free™ circuit will be drained. If power failure alarm does not sound with unit unplugged and power switch on, the Battery Free™ circuit is drained. It will recharge when unit is plugged in and switched on.

2. **LOW PRESSURE TEST-** There are two (2) seperate failure modes for Low Pressure.

   a. Low product tank pressure **(pressure in tank drops below a preset value, typically 7 p.s.i).**

   b. Failure to reach the set point pressure within a prescribed time limit, or Timeout Failure.

Test each in the following manner:

Low Pressure Test (FIGURE 1).

c1. With unit running, set flow at maximum rating. When the main valve switches, pull the stem on the compressor relief valve out as far as it will go and hold it. The low pressure alarm should activate within 30 seconds. **(Refer to FIGURE 5 for Shutdown Mode.)**

c2. With unit running, set flow at maximum rating. Remove the P.C. board tubing (tywrap) from the top of the product tank The low pressure alarm should activate within 30 seconds. **(Refer to FIGURE 5 for Shutdown Mode.)** Replace tubing and tywrap.

Time-Out Test (FIGURE 1)

d. With unit **OFF**, disconnect the compressor connector from the main wiring harness. Plug unit in and turn power **ON**. The Time-Out Failure alarm should activate within 40 seconds. **(Refer to FIGURE 5 for Shutdown Mode.)**

NOTE: If any alarm fails to perform to specification, contact Invacare Technical Service.

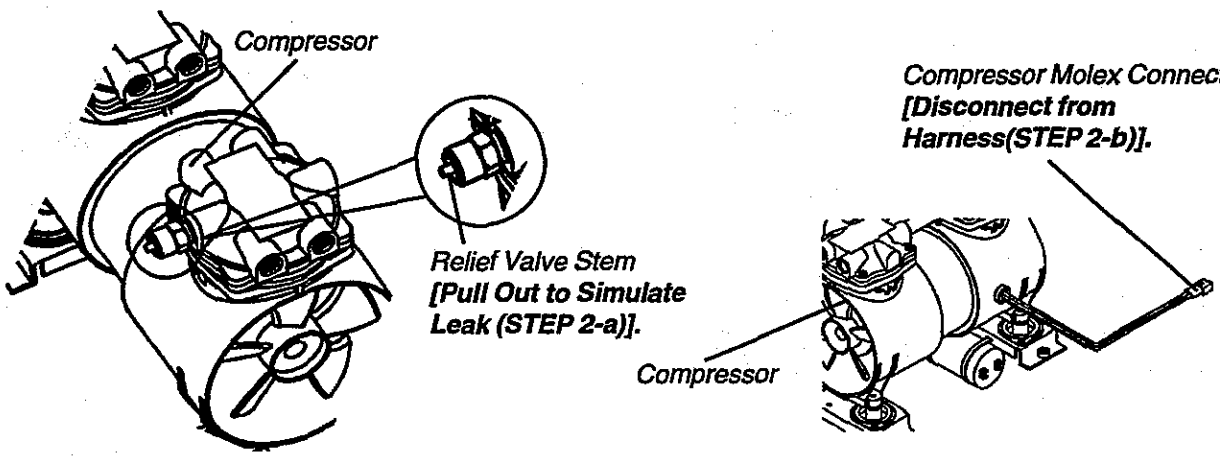


FIGURE 1 - LOW PRESSURE TEST

3. **HIGH PRESSURE** - Occurs when pressure in product tank rises beyond a preset value, typically 23 p.s.i. ± 1 p.s.i.

Test in the following manner:

High Pressure Test (FIGURE 2).

3-a. With unit running and flow set at 3 L/min. for **3LX,** 5 L/min. for **5LX/5LXO2** or 6 L/min. for **6LXO2,** remove one (1) **RED** wire from the top of **Pilot Valve 1.** The high pressure alarm should activate within 40 seconds. **(Refer to FIGURE 5 for Shutdown Mode.)**

3-b. Set flow at 3 l/min. for **3LX,** 5 L/min. for **5LX/5LXO2** or 6 L/min. for **6LXO2.** Turn unit **OFF** and remove one (1) **RED** wire from the top of **Pilot Valve 1.** Turn unit **ON.** The high pressure alarm should activate within 30 seconds. **(Refer to FIGURE 5 for Shutdown Mode.)**

NOTE: If any alarm fails to perform to specification, contact Invacare Technical Service.

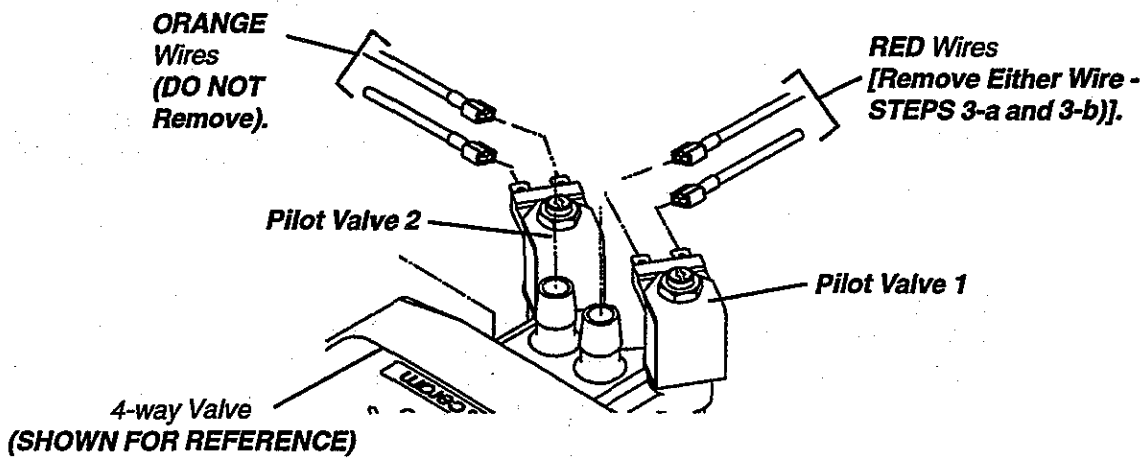

ORANGE Wires (DO NOT Remove).
RED Wires [Remove Either Wire - STEPS 3-a and 3-b)].
Pilot Valve 2
Pilot Valve 1
4-way Valve (SHOWN FOR REFERENCE)

FIGURE 2 - HIGH PRESSURE TEST

4. **OXYGEN SENSOR (5LXO2/6LXO2)** - Alarm sequence occurs when concentration levels fall below a preset value, typically 73% ± 3% or 85% ± 2%. This failure indicates a catastrophic failure of any component mechanical or electrical. This test is performed in a series of **STEPS.**

Test in the following manner:

Oxygen Sensor Test (FIGURE 3)

Ensure that Purity Switch (SW1) is set at 73%. (Refer to PROCEDURE 17 - SENSO2 ALARM INDICATOR AND SWITCH in this manual).

4-a. Turn unit **ON.** Set output flow at 5 L/min. **(5LXO2)** or 6 L/min. **(6LXO2).**

4-b. Monitor the **O2** level.

4-c. With the **O2** level greater than 85% after 5 minutes, the **GREEN** panel **LED** will illuminate.

4-d. Slowly adjust flow beyond maximum rated flow until you can achieve a concentration level greater than 75% but less than 84%. Within 30 min. the **YELLOW** panel **LED** indicator will illuminate and the unit will continue to run.

4-e.

CAUTION

Use care not to cut oxygen sensor tubing when clamping the oxygen sensor tubing.

Clamp off the 1/8-inch oxygen sensor tubing between the oxygen sensor and the tee in the supply line from the product tank.

4-f. Within 30 min., the Oxygen Sensor Alarm should activate.

NOTE: 85% Setting is NOT available on units without switch.

4-g. Repeat **STEPS 4-a and 4-c** with **(SW1)** set at 85%. **(Refer to PROCEDURE 17 - SENSO2 ALARM INDICATOR AND SWITCH in this manual).**

4-h. Unit will again climb to an **O2** level greater than 85% after 5 minutes and the **GREEN** control panel **LED** will illuminate. **(Refer to PROCEDURE 17 - SENSO2 ALARM INDICATOR AND SWITCH in this manual).**

4-i. Repeat **STEP 4-e.**

4-j. Within 30 min., the Oxygen Sensor Alarm should activate.

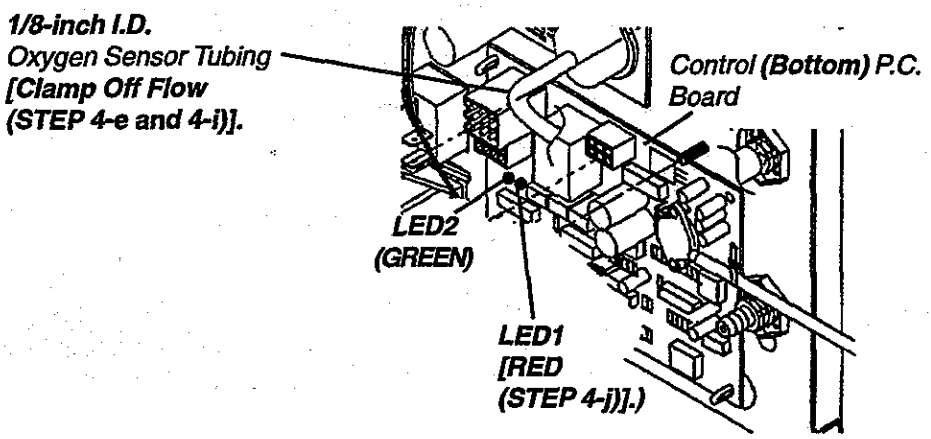
4-k. Reset Purity Switch to desired setting per chart **(FIGURE 3).**

NOTE: If problems arise during test, contact Invacare Technical Service for further assistance.

4-l. Reinstall cabinet. **(Refer to PROCEDURE 1 - REMOVING CABINET).**

4-m. If any alarm fails to perform to specification, **contact Invacare Technical Service.**

Your Invacare concentrator is now ready for an additional year. Use the **PREVENTATIVE MAINTENANCE RECORD** in this manual to record date and number of hours when preventive maintenance was performed on the concentrator, or any repairs made.



Indicators

O2 Purity	Internal Switch (If Present) *Set at 73%	Internal Switch (If Present) Set at 85%
Over 85% (± 2%)	**GREEN** Indicator Light	**GREEN** Indicator Light
73% (± 3%) to 85% (±2%)	**YELLOW** Indicator Light	**RED** Indicator Light - Continuous Audible Alarm Sieve GARD™ Compressor Shutdown
Below 73% (± 3%)	**RED** Indicator Light - Continuous Audible Alarm Sieve GARD™ Compressor Shutdown	**N/A**

* Factory Preset at 73%

FIGURE 3 - OXYGEN SENSOR TEST

5-a. **P.E. Valve Coil (IRC5LXO2 after S/N 97JXXXX)** - Alarm sequence occurs when the P.E. Valve Coil, connection or P.C. Board Circuitry has failed.

Test in the following manner:

P.E. Valve Coil Test (FIGURE 4)

5-b. With the unit running and flow set at 5 L/min., remove one (1) yellow wire from the P.E. Valve. The P.E. Coil Alarm should activate within 10 seconds. **(Refer to FIGURE 5 for Shutdown Mode.)**

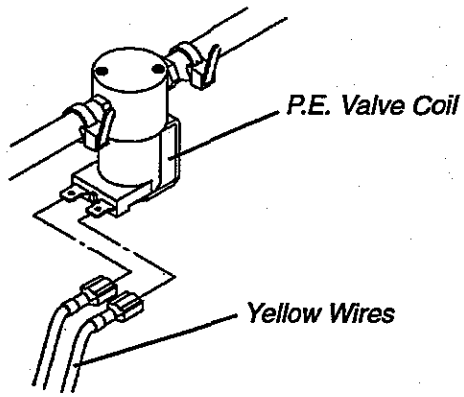


FIGURE 4 - P.E. VALVE COIL TEST

ALARM MODES

3LX, 5LX, 5LXO2 (BEFORE S/N 97JXXXX)

INTERNAL LED		
ALARM	**RED**	**GREEN**
High Pressure	On	Off
Low Pressure	On	On
Time-Out (30 Secs.)	On	On
Low O2	On	Off

All alarms have Compressor Shutdown, Horn ON and IRC5LXO2 ONLY - RED Panel LED ON.

3LX, 5LX, 5LXO2/5LXO2T, 6LXO2/6LXO2T (AFTER S/N 97JXXXX)

INTERNAL LED FLASHES			
ALARM	**RED**	**GREEN**	
Three (3) Beeps at Startup	0	0	No Problems - System OK
Short Beep, Long Pause	0	0	Main Power Loss
Continuous	1	1	Low Pressure: Major Leak
Continuous	1	2	High Pressure: No Switching
Continuous	1	3	Time-out Failure: Compressor
Continuous	1	4	Pilot Valve 1 Coil
Continuous	1	5	Pilot Valve 2 Coil
Continuous	2	1	73% Shutdown: Low O2
Continuous	2	3	PE Valve Coil
Continuous	2	4	Eprom Failure
Continuous	2	5	Ram Failure
Continuous	3	1	Oxygen Sensor Failure

***No Shutdown, Unit continues to run.**
All alarms have Compressor Shutdown, Horn ON and 5LXO2/5LXO2T, 6LXO2/6LXO2T ONLY - RED Panel LED ON.

FIGURE 5 - ALARM MODES

PROCEDURE 21 - SIEVE BED PRESSURE TAP-IN KIT INSTALLATION AND BED PRESSURE CHECK (FIGURES 1, 2 & 3)

CAUTION
TO PREVENT ELECTRICAL SHOCK, ALWAYS DISCONNECT CONCENTRATOR FROM ELECTRICAL OUTLET BEFORE SERVICING.

DISASSEMBLY

WARNING
Turn power OFF and unplug unit.

1. Remove the eight (8) 5/8-inch screws that secure the cabinet to the base and remove the cabinet from the base of the concentrator.
2. Turn unit so the back faces you.
3. Loosen and lower the adjustable clamp on the product tank.
4. Pull product tank up and back to access the check valve PVC tubing.

CAUTION
3LX and 5LX standard units (without SensO2) are equipped with a restrictor assembly located on the left top of the product tank as viewed from the rear. DO NOT remove tubing or restrictor. Install tap-in kit on the opposite side.

5. Locate the check valve and PVC tubing to your right.
6. Cut in half the PVC tubing below the check valve.

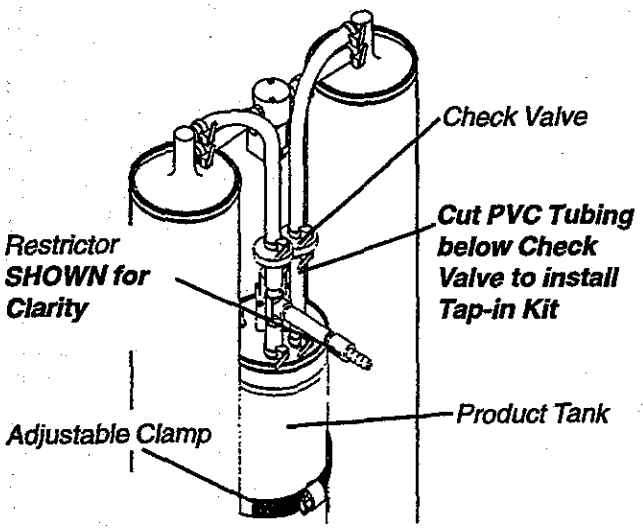

Check Valve
Cut PVC Tubing below Check Valve to install Tap-in Kit
Restrictor SHOWN for Clarity
Product Tank
Adjustable Clamp

FIGURE 1 - DISASSEMBLY

INSTALLATION (FIGURE 2)

1. Insert the "T" fitting into the ends of the PVC tubing.
2. Secure 1/4-inch clamps to each end of the PVC tubing "T" fitting connection.
3. Attach the 1/4 x 2-inch silicone tubing to the **NEW** "T" fitting and secure with a 1/4-inch clamp.
4. Insert plug into the open end of the 1/4 x 2-inch silicone tubing.
5. Secure with a 1/4-inch clamp.

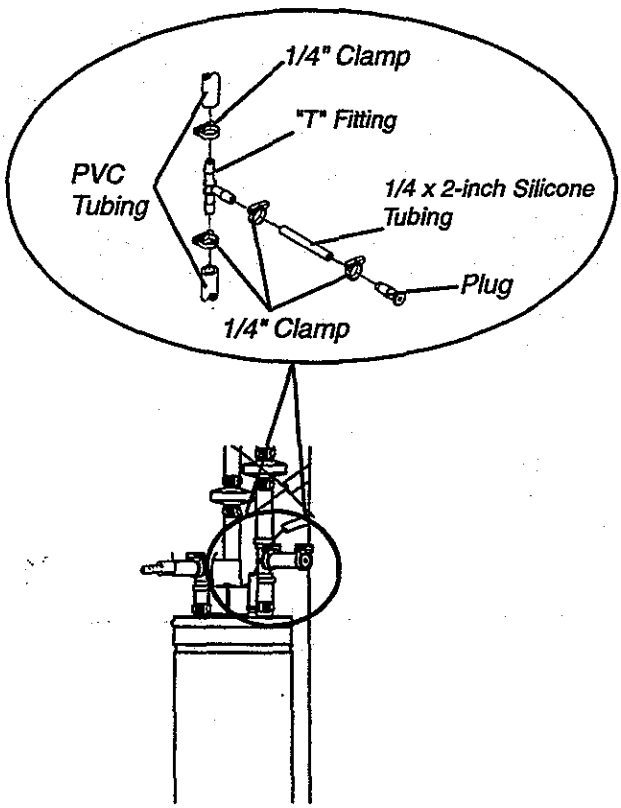


FIGURE 2 - INSTALLATION

PRESSURE TESTING (FIGURE 3)

1. Remove plug and Connect pressure gauge to the 1/4 x 2-inch silicone tubing and secure with a 1/4-inch clamp.
2. Check each connection to make sure they are tight.
3. Turn the concentrator **ON.**

PROCEDURE 21 - SIEVE BED PRESSURE TAP-IN KIT INSTALLATION AND BED PRESSURE CHECK (FIGURES 1, 2 & 3)

NOTE: Adjust the concentrator to MAXIMUM liter flow (3 liters for 3LX, 5 liters for 5LX/5LXO2 and 6 liters for 6LXO2).

NOTE: Wait approximately 5 minutes to allow system pressures to achieve proper equallibrium before testing.

4. The pressure in the concentrator should rise within 20 seconds to 20 PSIG ± .3 (BEFORE 97I) and 21 PSIG ± .3 (AFTER 97I) and shift the 4-way valve to the opposite sieve bed.
5. After the 4-way valve shift, the pressure in the concentrator will drop to 14 PSIG ± 2 before rising within 20 seconds to 20 PSIG ± .3 (BEFORE 97I) and 21 PSIG ± .3 (AFTER 97I) and shift the 4-way valve to the opposite sieve bed.
6. If pressure reading is 20 PSIG ± .3 (BEFORE 97I) and 21 PSIG ± .3 (AFTER 97I) when both valve shifts are made, proceed to **STEP 9.**
7. If pressure in the concentrator does not fall into the specifications listed above, **refer to the TROUBLESHOOTING section in this manual.**
8. Turn the concentrator **OFF.**
9. Unclamp the pressure gauge and remove it from the "T" fitting.

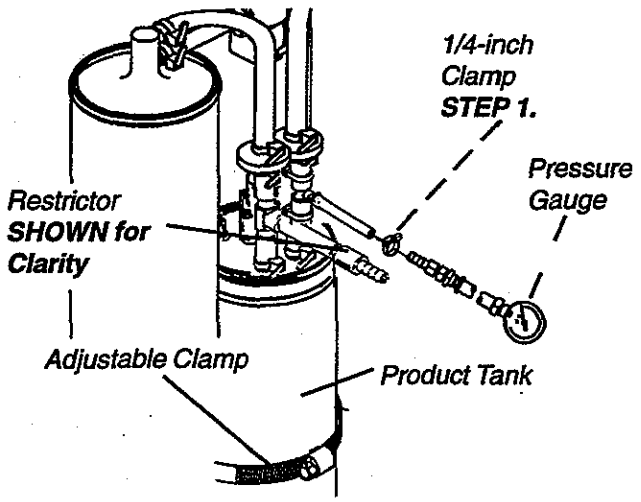


FIGURE 3 - PRESSURE TESTING

AFTER TESTING (FIGURE 4)

1. Insert 1/4-inch plug and 1/4 x 2-inch silicone tubing onto the "T" fitting and secure with 1/4-inch clamp.
2. Reinstall the cabinet onto the base of the concentrator.

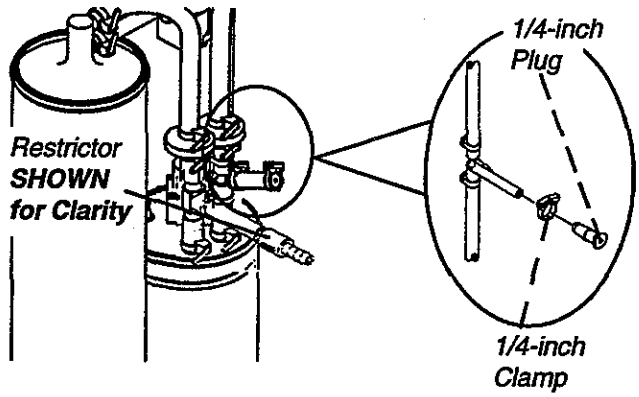


FIGURE 4 - AFTER TESTING

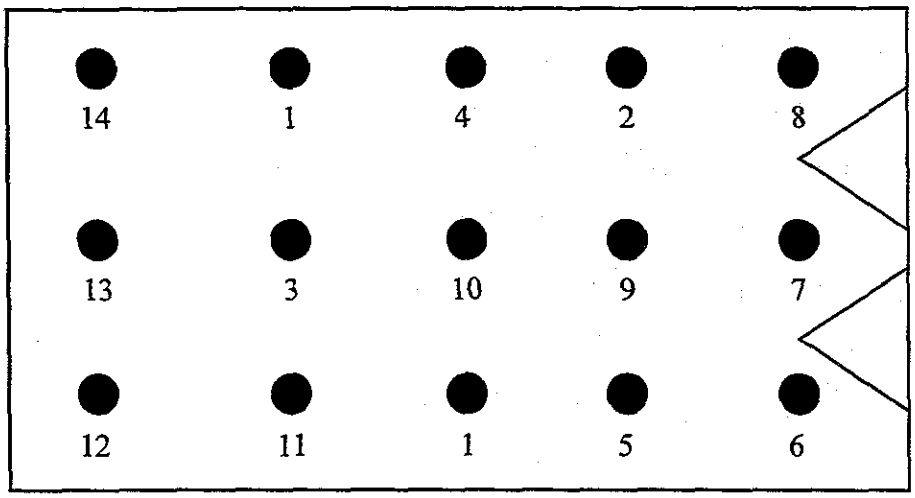
RESPIRATORY TOOLS

1. 3 MM ALLEN "T" HANDLE WRENCH 9"
2. 2.5 MM ALLEN "T" HANDLE WRENCH 9"
3. AIR GAUGE 0-30 P.S.I.
4. #1 PHILLIPS HEAD SCREWDRIVER
5. #2 PHILLIPS HEAD SCREWDRIVER
6. STANDARD SCREWDRIVER
7. LONG NEEDLE NOSE PLIERS
8. SLIP-JOINT PLIERS
9. PUSH ROD (WOOD DOWEL, 1/2" X 6")
10. ASSORTED WRENCHES
11. TUBE OF FLOURMATICS "LOX 8" JOINT SEALANT
12. O2 ANALYZER
13. LITER METER
14. ACCETONE OR 100% ALCOHOL
15. NUMATICS CLEANER
16. "LINT-FREE" SHOP RAGS
17. LEAK DETECTOR
18. DIGITAL VOLT METER

OPTIONAL TOOLS

1. 3/8" DRIVE SOCKET SET
2. NYLON MALLET
3. COMPRESSED AIR SOURCE
4. CAMEL HAIR BRUSH

FIFTEEN-PIN MOLEX CONNECTOR



1. FLOWMETER LAMP (BLACK)
2. IRC 501 PE VALVE (BLACK)
3. POWER SWITCH (BLACK)
4. EXHAUST FAN (BLACK)
5. POWER SWITCH (WHITE) OFF
6. FOUR WAY VALVE (WHITE)
7. FOUR WAY VALVE (WHITE)
8. IRC 501 PE VALVE (WHITE)
9. POWER SWITCH (WHITE) ON
10. HOUR METER (BLACK)
11. HOUR METER (WHITE)
12. POWER CORD (WHITE)
13. EXHAUST FAN (WHITE)
14. COMPRESSOR (WHITE)

NOTE: COMPRESSOR BACK TO RELAY N.O. (ZETTLER RELAY ON P.C. BOARD)

INVACARE
Innovation in Health Care™

Muffler Upgrade Kit Kit Number 2001154

Installation and Assembly Instructions

The following instructions apply to Mobilaire III (IRC301) and Mobilaire V (IRC501) upgrade.

WARNING
Turn OFF power and UNPLUG the cord from the Mobilaire Oxygen Concentrator.

1. Remove the eight (8) 5/16-inch truss head screws that secure cabinet housing assembly to the base assembly.
2. Cut and remove the push mount cable tie that secures the pneumatic muffler to the sound box wall.
3. Remove the existing pneumatic muffler, 1/2-inch braided tube, 1/2-inch barb "Y" fitting and the two (2) sections of 1/2-inch braided tube.
4. Loosen the clamp on the bottom middle straight fitting of the 4-way valve assembly and remove the 1/2-inch hose.
5. Remove the four (4) screws that secure the control panel to the support frame.
6. Remove the clear tubing that is connected to the bottom of the flowmeter on the back of the control panel.
7. Move the control panel to the right-side of the 4-way valve assembly.
8. Remove the section of the support frame that is next to the 4-way valve assembly.

NOTE: This will make access to the 4-way valve assembly mounting bracket easier.

9. Remove the three (3) 8/32 x 2-inch phillips head screws, rubber spacers, lockwashers and nuts that secure the 4-way valve assembly to its mounting bracket.

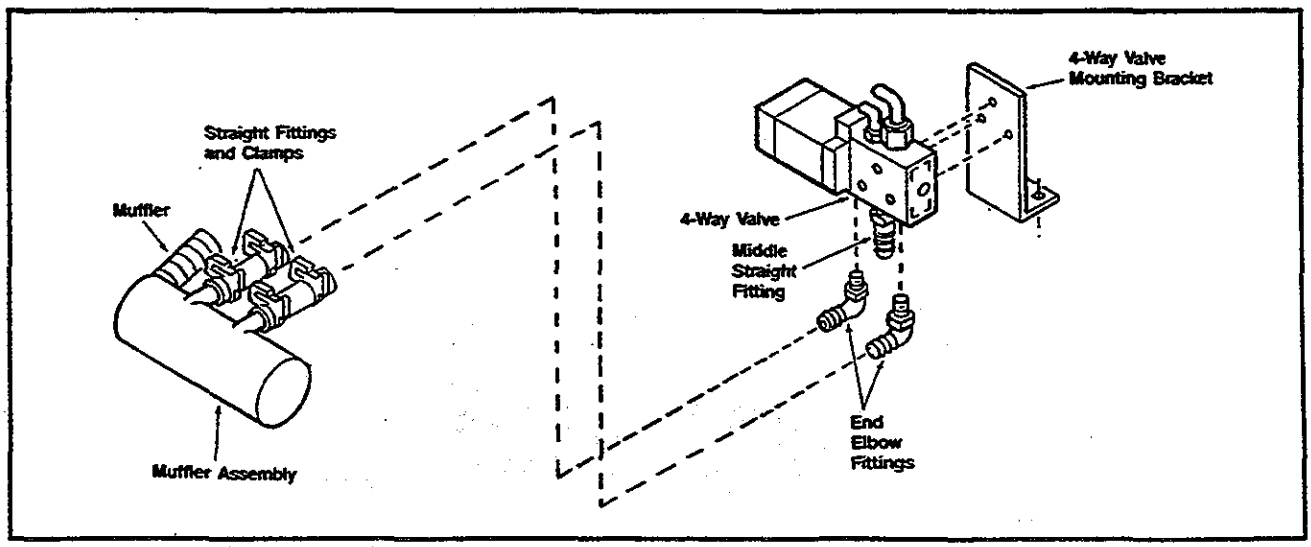


FIGURE 1 - INSTALLATION OF THE NEW MUFFLER ASSEMBLY

(Please turn over)

NOTE: Not all units have the hardware as listed in Step 9. Units built before 91A will not have rubber washers or lock washers.

10. Remove the two (2) clamps and hoses from the top of the 4-way valve.

11. Remove the 4-way value assembly from the concentrator.

12. Remove the bottom middle straight fitting and the two (2) end straight fittings of the 4-way valve assembly.

***NOTE: Use Flouramics Lox-8* thread sealant and apply sealant two (2) threads in on the fittings to make sure that the sealant doesn't break off and enter the 4-way valve.**

13. Attach the new elbow fittings to each end of the 4-way valve assembly.

14. Clean the bottom middle straight fitting that was removed, apply thread sealant and reinstall the fitting into the bottom middle hole of the 4-way valve assembly.

15. Reinstall 4-way valve assembly to the mounting bracket using the existing $^{8}/_{32}$ x 2-inch phillips head screws, rubber spacers, lockwashers and nuts.

16. Place the $^{1}/_{2}$-inch braided hose and clamp over the straight fitting and secure.

17. Place the straight hoses with fittings (muffler assembly) over the elbow fittings on the 4-way valve and secure.

NOTE: When installing the muffler assembly, make sure that the fan leads are not disconnected.

18. Reroute existing wires over the top of the elbow fittings.

19. Place a piece(s) of black electrical tape between braided hoses and existing insert hole to prevent hose from rubbing against insert hole.

20. Reinstall the flowmeter hose to the back of the control panel.

21. Reinstall support frame and control panel.

22. Attach cabinet housing assembly to the base assembly.

*Flouramics Inc, 18 Industrial Avenue, Mahwah, NJ 07430 (201-825-8110)

INVACARE®
Innovation in Health Care.

MOBILAIRE

by INVACARE® Innovation in Health Care

COOLING FAN REPLACEMENT

Installation, Assembly and Operating Instructions

KIT NO. 2001361 (IRC301/501/501C)
KIT NO. 2001360 (IRC501A)

COOLING FAN REPLACEMENT FOR MOBILAIRE III and V MODELS IRC301/IRC501/IRC501C/ IRC501A)

THIS SERVICE KIT CONSISTS OF

Part No.	Description	Quantity
2000817 or 1027358	Exhaust Fan (IRC301/501/501C) or Exhaust Fan (501A)	1
2000755	Cable Tie Mount	4
2000862	#10 x 1" Pan Head Screw	4
98007X005	Tywrap	4
2001362	Instruction Sheet	1
1028794	#6 x ¼" Self Tapping Screw	1
2000754	Tywrap	1
1006525	Tywrap	1

WARNING
Only Qualified Service Personnel should perform this retrofit procedure.

CAUTION
To prevent electrical shock, always disconnect concentrator from electrical outlet before servicing.

1. Unplug unit.
2. Remove cabinet.
3. Remove the two (2) upper screws that secure the control panel **(FIGURE 1)**.
4. Loosen the two (2) lower screws that secure the control panel **(FIGURE 1)**.
5. Remove the clamp that secures the tubing on the product tank to the PC board. Remove the tubing from the product tank **(FIGURE 1)**.
6. Disconnect molex connector on the PC board **(FIGURE 1)**.
7. Disconnect the flowmeter tubing from the bottom of the flowmeter on the control panel **(FIGURE 1)**.

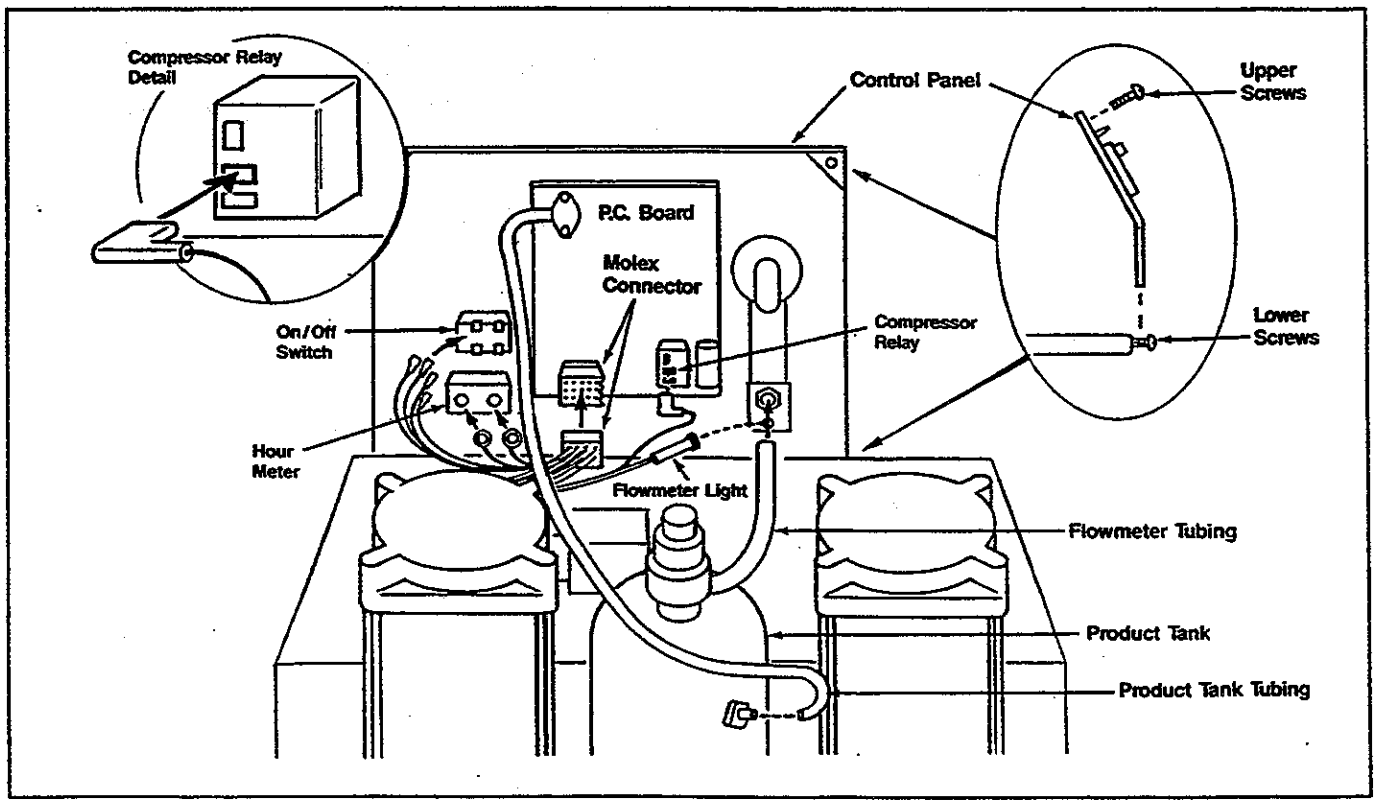
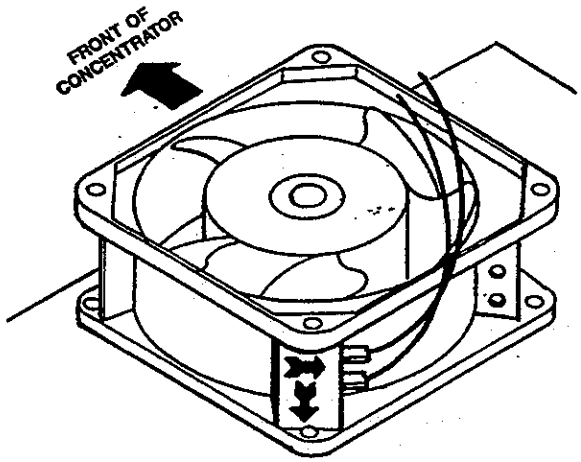


FIGURE 1 — REMOVING THE CONTROL PANEL

8. Remove wires from the hour meter, flowmeter light, compressor relay and ON/OFF switch.
9. Remove control panel.
10. Remove intake hose from resonator **(FIGURE 3).**
11. Remove hose from exhaust side of compressor **(FIGURE 3).**
12. Disconnect molex connectors from compressor wiring harness **(FIGURE 3).**
13. Cut and remove tywrap that secures compressor wiring harness to sound box support rod **(FIGURE 3).**
14. Remove compressor green grounding wire from control panel side of sound box (301/501) **(FIGURE 3).**
15. Remove four (4) screws securing compressor bracket to caster base **(FIGURE 3).**
16. Pull compressor assembly out.
17. Cut four (4) tywraps from heat exchanger **(FIGURE 3).**
18. Disconnect wires from spade lugs on fan.
19. Disconnect fan green grounding wire by removing self-tapping screw on fan assembly. Discard screw (301/501).

NOTE: Before removing clips note the position. These clips must be positioned properly to secure heat exchanger **(FIGURE 3).**

20. Remove fan by removing four (4) screws located under fan and discard screws and clips **(FIGURE 3).**
21. Replace cooling fan using new clips and four (4) mounting screws **(FIGURES 2 and 3).**



WARNING

Fan must be properly located so air from the fan blows down on the compressor. The fan must be located properly (Figure 2) or damage to the unit will occur.

FIGURE 2 — POSITIONING THE NEW FAN

22. Reconnect fan green grounding wire by using #6 Self-tapping screw provided (301/501).
23. Secure heat exchanger using four (4) tywraps to the fan tywrap mounts **(FIGURE 3).**
24. Replace compressor **(FIGURE 3).**
25. Reverse the preceeding steps and reassemble all components of the concentrator.
26. Plug in unit and test for correct pressure/leaks at test points.

NOTE: Run unit for at least ½ hour.

27. If unit runs properly, replace cover.
28. If not, call service.

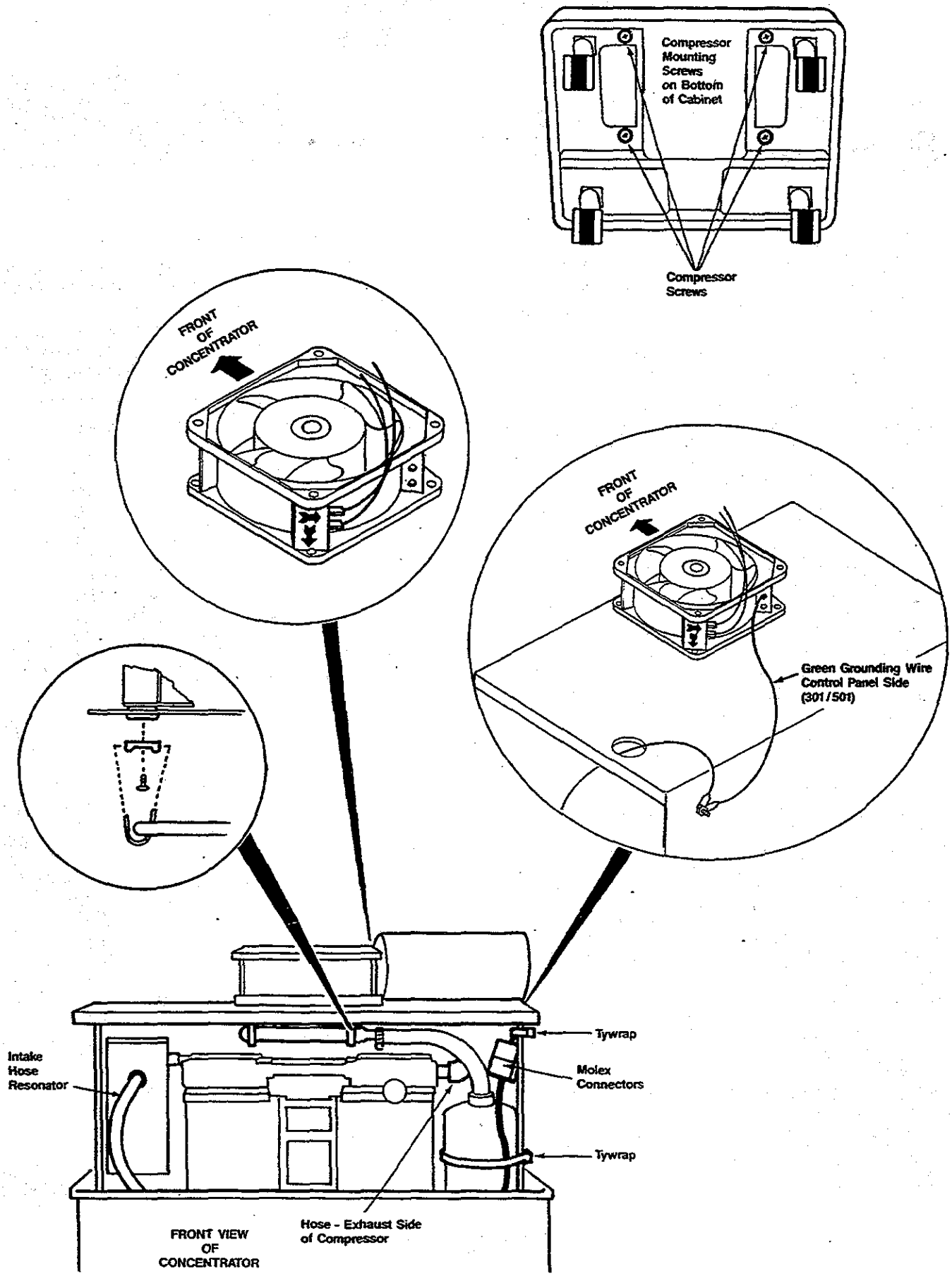


FIGURE 3 — REPLACING COOLING FAN

MOBILAIRE™

by INVACARE®

COMPRESSOR OUTLET HOSE

Installation And Assembly Instructions

KIT NO. 2001378

KIT INCLUDES THE FOLLOWING:

1. P/N 2001375 - One (1) Silicone Hose 8.5-inches long.
2. P/N 2001370 - Two (2) Braided Sleeves 3-inches long.
3. P/N 2000765 - One (1) Stainless Steel Spring used in conjunction with Item 1.
4. P/N 2001366 - One (1) Compressor Fitting (Straight).
5. P/N 1021149 - One (1) Plastic Bag.
6. P/N 2001377 - One (1) Instruction Sheet.

REPLACING THE HOSE/90 DEGREE ELBOW THAT RUNS FROM HEAT EXCHANGER TO COMPRESSOR ASSEMBLY

The following instructions apply to Mobilaire III (IRC301) and Mobilaire V (IRC501, 501A and IRC501C).

WARNING

Turn OFF power and UNPLUG the cord from the Mobilaire Oxygen Concentrator.

1. Remove the 8 x 5/8-inch truss head screws that secure cabinet housing assembly to the base assembly.

NOTE: When removing the stainless steel clamps from the hoses, use either a screwdriver or a 1/4-inch socket wrench.

2. Remove the two (2) clamps that secure the two (2) sections of hose and 90 degree elbow that runs from the rear of the heat exchanger to the compressor assembly.
3. Remove the 90 degree compressor fitting from the compressor assembly and discard.
4. Clean the threads in the compressor housing where the fitting was removed with isopropyl alcohol.

CAUTION

When applying teflon tape to the new straight fitting, leave the first two (2) threads that are inserted into the compressor housing exposed. Teflon tape will be applied on the remainder of the threads. This is to ensure that the teflon tape doesn't break off and enter the compressor assembly.

5. Apply teflon tape and install the NEW straight fitting **(Item 4)** into the threaded holes of the compressor assembly. Securely tighten.
6. Insert the Spring **(Item 3)** into 8.5-inch silicone hose **(Item 1)** and attach to the rear of the heat exchanger.
7. Slide the 3-inch braided sleeve **(Item 2)** onto the silicone hose and position it on the hose end that attaches to the compressor assembly fitting.
8. Securely tighten the stainless steel clamps.
9. Loosen the stainless steel clamp (at the in-line filter) and remove the hose end. (This hose runs from the front of the heat exchanger to the in-line filter.)
10. Slide the 3-inch braided sleeve **(Item 2)** onto the silicone hose and position it on the hose end that attaches to the in-line filter.

NOTE: This will protect the hoses during shipment.

11. Securely tighten the stainless steel clamp.
12. Attach cabinet assembly to the base assembly.

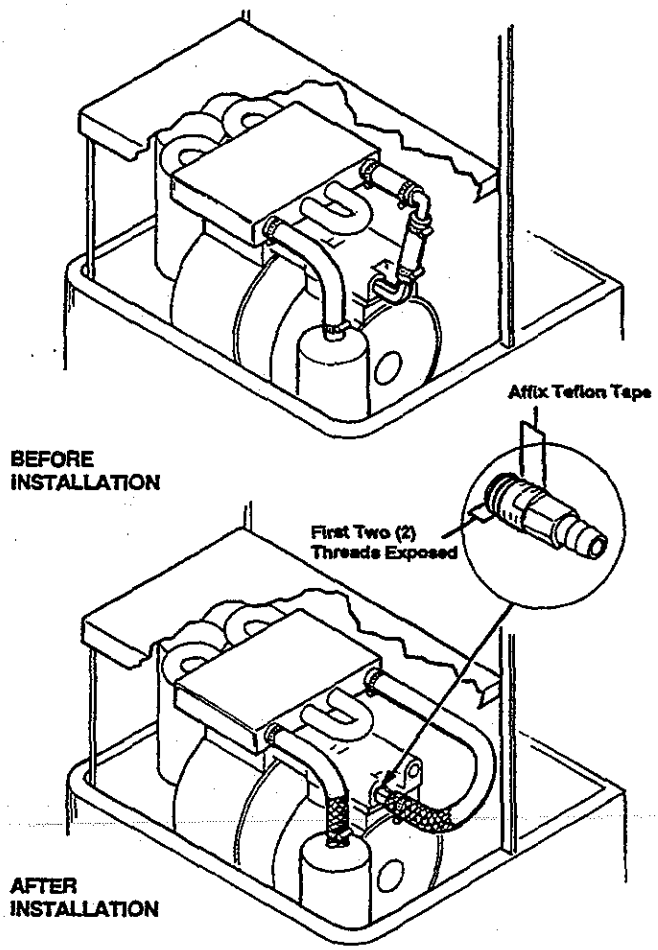


FIGURE 1 - REPLACING THE HOSE/90 DEGREE ELBOW FROM HEAT EXCHANGER TO COMPRESSOR ASSEMBLY

INVACARE®
Innovation in Health Care

1301 Silver Lake Drive • Sanford, Florida 32773 • Phone (407) 321-5630

IRC3LX / IRC5LX / IRC5LXO2
PILOT VALVE POPPET REPLACEMENT KIT PART NO. 2003083

INVACARE We build trust

Assembly, Installation and Operating Instructions

SAFETY SUMMARY

The following recommendations are made for the safe installation of the Pilot Valve Poppet Replacement Kit:

WARNING

DO NOT INSTALL THIS KIT WITHOUT FIRST READING AND UNDERSTANDING THESE INSTRUCTIONS. IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS, AND INSTRUCTIONS, CONTACT YOUR INVACARE DEALER OR INVACARE TECHNICAL SERVICES (800- 832-4707) BEFORE PERFORMING THIS INSTALLATION. IMPROPER USE MAY CAUSE PERSONAL INJURY AND/OR EQUIPMENT DAMAGE. ONLY AUTHORIZED AND QUALIFIED TECHNICIANS SHOULD PERFORM THIS INSTALLATION.

Check all parts for shipping damage. If damage is found, DO NOT use. Contact Carrier/Invacare for further instructions.

Unplug concentrator before beginning.

Ensure that all items are properly and securely installed.

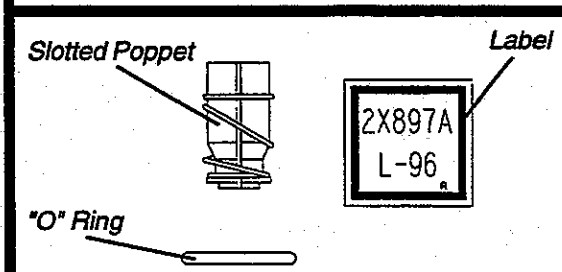
Refer to the IRC3LX and 5LX Service Manual - Part No. 2002728 Rev. Level 2/97 for assistance.

Tools Required:

1. One (1) 9/16-inch Boxed End Wrench
2. One Flat Blade Screwdriver
3. One Phillips Head Screwdriver

This kit includes the following:

ITEM	DESCRIPTION	QTY.
1.	Slotted Poppets	2
2.	"O" Rings	2
3.	Labels	2



PILOT VALVE POPPET KIT COMPONENTS

REMOVING THE CABINET (FIGURE 1)

WARNING

Unplug concentrator before beginning.

1. Unplug unit.
2. Remove the eight (8) mounting screws that secure cabinet assembly to the base assembly and lift the cabinet straight up.

NOTE: When required, vacuum inside of the cabinet and exposed foam insulation.

3. To re-install cabinet, reverse **STEP 2.**

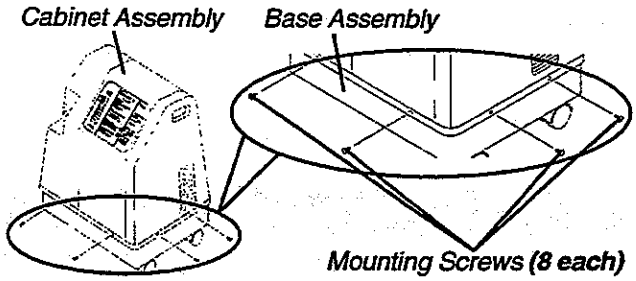


FIGURE 1 - REMOVING THE CABINET

REMOVING THE CONTROL PANEL (FIGURE 2)

NOTE: Refer to the IRC 3LX/IRC5LX/IRC5LXO2 Service Manual for assistance in this procedure if necessary.

1. Remove the two (2) upper mounting screws that secure the control panel.
2. Loosen the two (2) lower mounting screws that secure the control panel.
3. Grasp the control panel and gently lift and pull forward allowing control panel to rest in front of the concentrator.

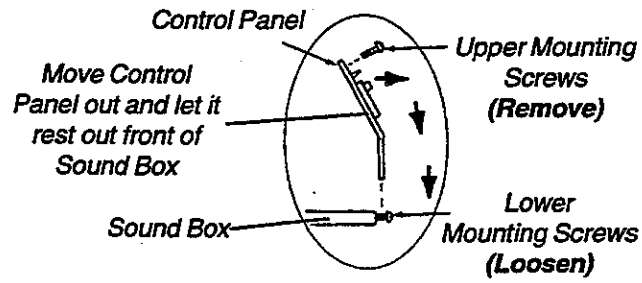

Control Panel
Upper Mounting Screws (Remove)
Move Control Panel out and let it rest out front of Sound Box
Sound Box
Lower Mounting Screws (Loosen)

FIGURE 2 - REMOVING THE CONTROL PANEL

Form No. 97-108

REMOVING/INSTALLING PILOT VALVE POPPETS AND "O" RINGS (FIGURES 3 AND 4)

Removing

WARNING

Unplug concentrator before beginning.

NOTE: Both pilot valves can be accessed while the 4-way valve and sieve bed hoses are intact on the concentrator.

NOTE: DO NOT remove spade connectors from pilot valve coils. Simply lay coils with spade connectors aside while performing this installation.

1. Hold pilot valve stem with the flat blade screwdriver and turn the 9/16-inch locknut counterclockwise one (1) complete turn.
2. Unscrew the pilot valve stem assembly from the manifold while leaving the coil with yoke and locknut intact on stem.
3. Remove pilot valve poppet from inside the pilot valve stem.

CAUTION

STOP! DO NOT REMOVE THE COIL YOKE FROM THE COIL. The washer between the bottom of the yoke and the bottom of coil is not designed to be removed and difficulty in reassembly will be encountered that could cause damage to components.

4. Set aside the coil with yoke and pilot valve stem assembly with the wires still intact.

CAUTION

DO NOT use sharp tools to remove "O" ring from plastic manifold opening. Damage to the plastic manifold and/or plastic manifold airflow passage could occur (FIGURE 3).

5. Remove "O" ring from manifold opening **(FIGURE 3).**
6. Discard old poppet and "O" ring **(FIGURE 3).**

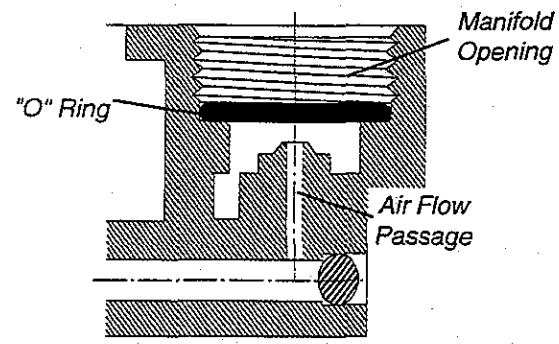


FIGURE 3 - REMOVING/INSTALLING "O" RING

Installing

1. Install NEW "O" ring into the opening in the manifold housing **(FIGURE 3).**

CAUTION

DO NOT overtighten pilot valve stem when installing it into plastic manifold. Damage to the rubber "O" ring and/or manifold may occur.

2. Install NEW slotted poppet into the bottom of the pilot valve stem with tapered end facing to the bottom **(FIGURE 4).**
3. Install pilot valve stem and NEW slotted poppet with coil with yoke and locknut intact into manifold opening.
4. Use the flat blade screwdriver and tighten pilot valve stem clockwise until snug. **(Reference: Torque to 25-inch lbs. ± 5-inch lbs.).**
5. Install NEW label onto pilot valve coil yoke.
6. Position pilot valve coil with yoke at an approximate 60° angle to the left **(as viewed from the front of valve)** to ensure spade connectors are not pulled or tensioned after reinstallation.
7. Use the flat blade screwdriver and hold the pilot valve stem in place.
8. Tighten locknut clockwise with the 9/16-inch wrench until snug to secure the stem and coil with yoke. **DO NOT OVERTIGHTEN. (Reference: Torque to 20-inch lbs. ± 3-inch lbs.).**

CAUTION

DO NOT overtighten locknut when installing it onto pilot valve stem. Damage to the plastic manifold may occur.

9. Repeat the **FIGURE 3 PROCEDURE** for other pilot valve.

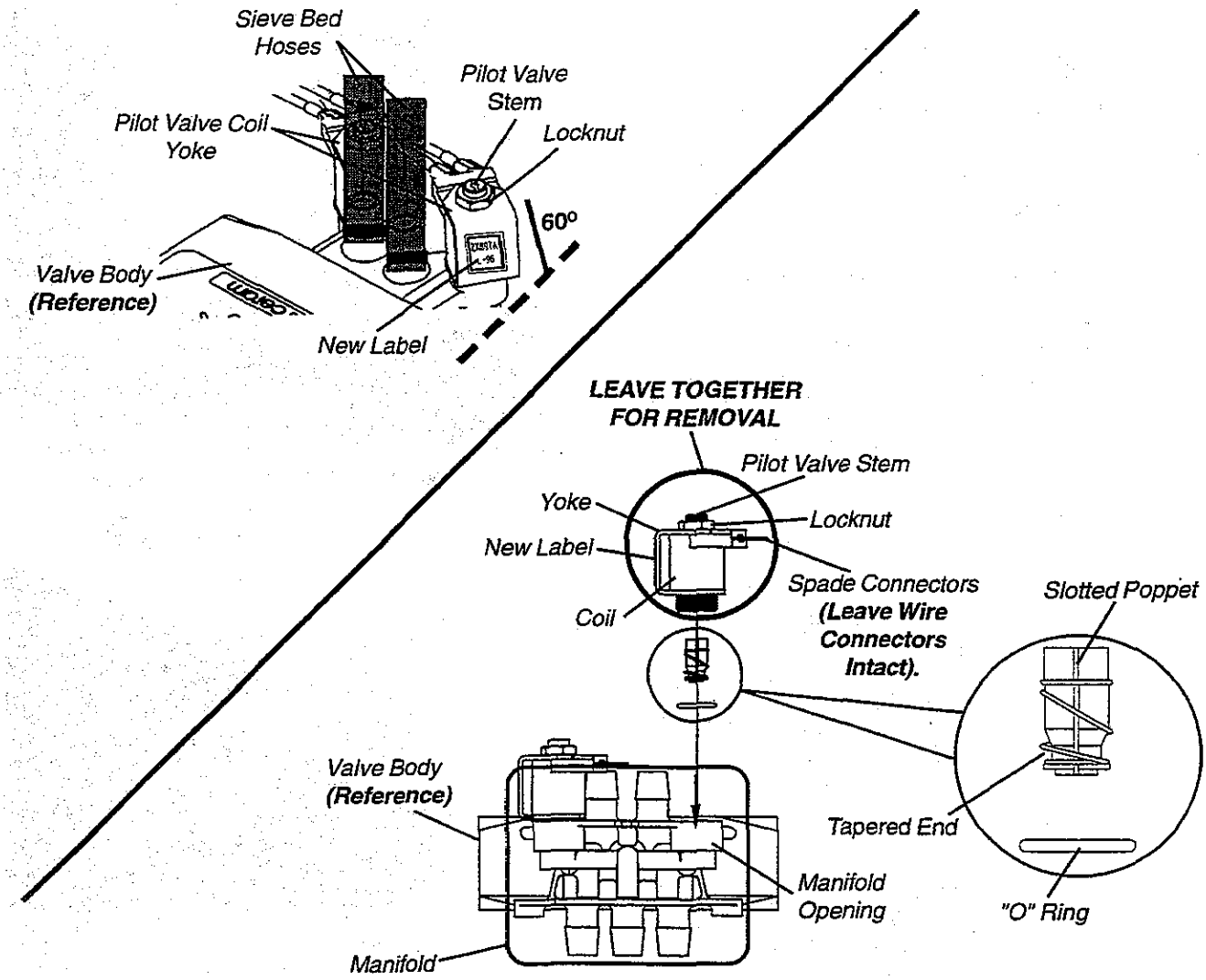


FIGURE 4 - REMOVING/INSTALLING PILOT VALVE POPPETS AND "O" RINGS

REINSTALLING CONTROL PANEL (FIGURE 5)

1. Reposition lower control panel mounting screw cut-outs behind lower mounting screws and secure lower mounting screws.

CAUTION

Ensure that hoses behind control panel DO NOT contact cooling fan after control panel reinstallation.

2. Reinstall upper mounting screws.
3. Plug power cord in and turn concentrator on to ensure proper operation.

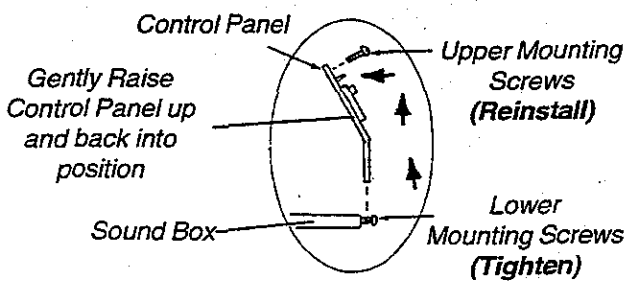

Control Panel
Upper Mounting Screws (Reinstall)
Gently Raise Control Panel up and back into position
Lower Mounting Screws (Tighten)
Sound Box

FIGURE 2 - REINSTALLING THE CONTROL PANEL

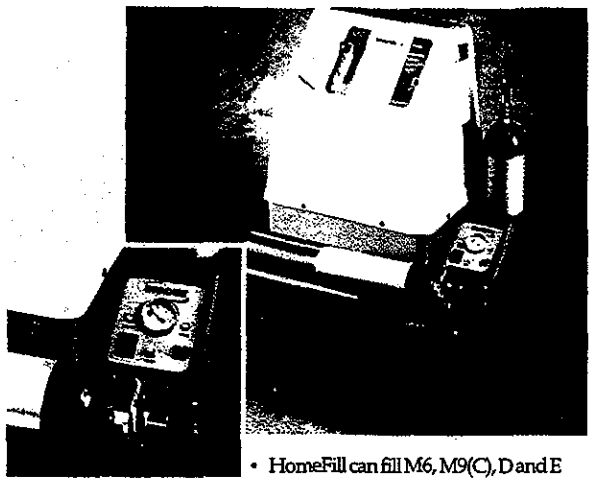
4. Reinstall cabinet. (**Refer to FIGURE 1 - REMOVING CABINET in this instruction sheet**).
5. If any difficulties are encountered in this installation, contact **Invacare Technical Service** at **(800) 832-4707 or in Florida 1 - (407) 321-5630.**

INVACARE® Venture

HOMEFILL™ COMPLETE HOME OXYGEN SYSTEM

The Invacare® Venture™ HomeFill™ complete home oxygen system will revolutionize ambulatory oxygen by allowing patients to fill their own high pressure cylinders from a concentrator. The Venture HomeFill is a multi-stage pump which simply and safely compresses oxygen from a specially-adapted Invacare six-liter concentrator into high pressure cylinders in sizes M6, M9, D and E.

The ability to fill their own cylinders gives ambulatory patients greater independence and freedom. Home care oxygen providers also will benefit from the elimination of time-consuming and costly service calls. The HomeFill system consists of the separate components of a concentrator and a compressor for maximum equipment flexibility and inventory management.

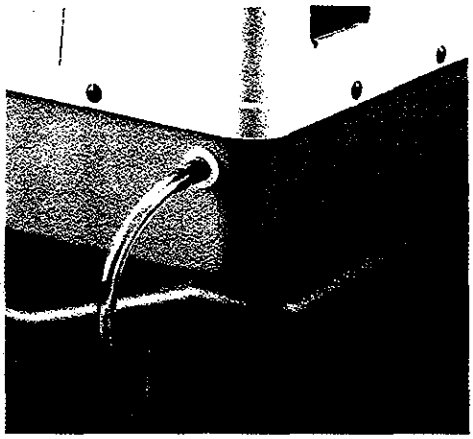


• HomeFill can fill M6, M9(C), D and E size cylinders that have a CGA870 style post valve. Connections and controls are designed for ease of operation by ambulatory patients.

QUICK REFERENCE

FEATURES/BENEFITS:

- Fills high pressure oxygen cylinders from a concentrator
- Fill cylinders while patient continues to receive oxygen from the concentrator
- Eliminates expensive service calls
- Ambulatory patients can fill their own cylinders at home
- Patients can maintain their independent lifestyle
- Fills M6, C, D and E size cylinders to 2,000 PSI
- Typical M6 cylinder fill time of one (1) hour



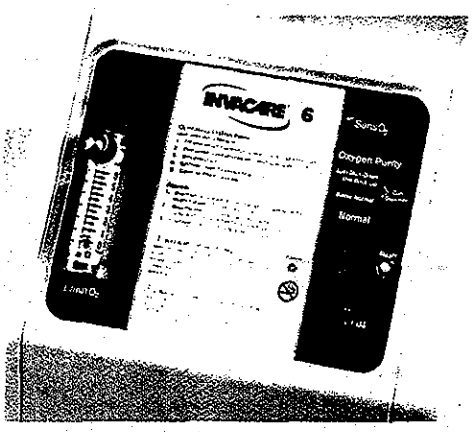
• Unique connection attaches the concentrator to the HomeFill compressor

MODEL SELECTION GUIDE

IOH100	Venture HomeFill Oxygen Compressor - For use with Invacare IRC6LXO2H Concentrator
IRC6LXO2H	Specially equipped Invacare 6 Liter Concentrator - Refer to Invacare 6 liter concentrator literature for warranty and specifications information

HOMEFILL OXYGEN COMPRESSOR (IOH100) SPECIFICATIONS

ELECTRICAL REQUIREMENTS	120 VAC +10% -15% (132 VAC/102 VAC), 60 Hz
POWER CONSUMPTION	350 W
RATED CURRENT INPUT	3.0 A
OXYGEN INPUT	0-3 LPM
INLET PRESSURE RATING	6-13.5 PSI
OXYGEN OUTPUT	0-3 LPM
OUTLET PRESSURE RATING	2,000 PSI (± 50 PSI)
WIDTH	27"
HEIGHT	16"
DEPTH	23.5"
WEIGHT	112 lbs.



• The specially equipped Invacare model IRC6LXO2H concentrator consistently provides high concentrations of oxygen both directly to the patient and for filling portable cylinders.

HOMEFILL OXYGEN COMPRESSOR WARRANTY:

1 year full warranty, 3 year parts and labor warranty on internal wear components and control panel components

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Patent Pending.

Specifications are subject to change without notification.